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HELIPORT/VERTIPORT IMPLEMENTATION PROCESS - CASE STUDIES

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U.S. Department
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Dear Colleague:

If the rotorcraft industry is to continue to prosper and grow, there is a need for an expanding number of public-use landing facilities. A limited number of such facilities have been built and operated successfully. However, attempts to build public-use heliports have often failed, usually at the local level. Recently, we have studied this issue, attempting to understand why some facilities are approved and constructed and others are rejected. A copy of this study, **Heliport/Vertiport Implementation Process - Case Studies, FAA report number FAA/ND-96/1**, is enclosed.

This report analyzes the approval process in several ways. In addition, six case studies of actual heliport approval processes are presented. Such studies can help by developing a better understanding of what is critical to the success of such projects during the approval process. Finally, the report offers strategies for consideration by those who are contemplating the development of a public-use heliport or vertiport.

This report is one of several dozen that have been published by the FAA on issues dealing with heliport/vertiport planning and design. (The majority of these documents are discussed in a bibliography entitled Safe Heliports Through Design and Planning - A Summary of FAA Research and Development, FAA report number FAA/RD-93/37). The rotorcraft industry does much to assist the nation in satisfying its transportation requirements. By publishing these various documents, the FAA hopes to continue fostering an increase in the benefits provided to the nation by this unique mode of transportation.

Sincerely,

Richard A. Weiss
Manager, General Aviation and
Vertical Flight Program Office

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16. Abstract Attempts to build public-use facilities have often failed, primarily at the local government level. On the other hand, a few public-use heliports and vertiports have been built and operated successfully. This raises the question of why some heliports are approved and built while others are rejected? The study attempts to provide some answers to that question and to identify more effective approaches to the public approval processes for vertical flight facilities.

This study analyzes the approval process three ways. First, through the investigation of the nature of the public approval/implementation process that presents two approaches to heliport implementation. One is the Systematic Development of Informed Consent (SDIC) and the second is based on the results of a workshop held with persons experienced with heliport implementation. Next, six case studies of actual heliport approval processes are presented to promote an understanding of critical elements and procedures significant in determining the success or failure of heliport/vertiport projects during the approval process. Case study locations are: Dallas; Portland; Miami; Pittsburgh; Washington, DC; and San Francisco. The final section of this study provides information and offers strategies to assist heliport proposers in counteracting influences that often frustrate the implementation process.

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1.0 BACKGROUND

One of the prime interests of the helicopter industry has been heliport development, particularly public-use facilities. The industry believes that an extensive public-use heliport infrastructure will encourage helicopter use. However, almost all heliports are privately owned and private-use. Attempts to build public-use heliports often failed.

In the late 1970s and early 1980s, numerous cities, regions, and states undertook heliport feasibility studies to include system, master, and site selection plans. The Federal Aviation Administration (FAA) encouraged these studies by issuing grants through the Airport Improvement Program (AIP). This was anticipated as a major breakthrough in heliport development. There was similar optimism for the AIP-funded vertiport studies completed in the late 1980s and early 1990s inspired by the prospect of the civil tiltrotor (CTR) becoming available for public transportation. Although most of the planning studies identified a strong demand for heliports, very few public-use heliports or vertiports were constructed as a result of these studies.

This experience demonstrates that even though one, or several, local, regional, or state government or planning authorities may be interested enough to perform a heliport or vertiport study, vertical flight facilities, more often than not, are not constructed. On the other hand, a few public-use heliports and vertiports have been built and operated successfully. This raises the question of *why some heliports are approved and built while others are rejected?* The purpose of this study is to attempt to provide some answers to that question and to identify more effective approaches to the public approval processes for vertical flight facilities.

1.1 INTRODUCTION

It is anticipated that the answer to why some heliports are built and others are not, can at least partially be discovered by investigating the processes through which a heliport must go in order for it to be approved. Although this effort investigates all levels of government review and approval, the focus is on the local government process. This approach is based on the observation that when plans for heliport development are disapproved, it is at the local level. This is supported by a previous study, "Four Urban Heliport Case Studies" (reference 1) that concluded that ultimately the decision on whether or not a heliport is constructed, or allowed to remain open, most often lies at the local level.

These observations and conclusions are reinforced by the underlying principle that state governments have overriding authority for land use decisions in their jurisdictions, but have consistently delegated that authority to local entities except in unincorporated areas. The Federal government, and the FAA in particular, recognize state and local jurisdiction over land-use control, including the decision to approve or deny permits for airports (heliports and vertiports are included in the definition of airports). Federal regulation 14 CFR 157, Notice of Construction, serves as the basis for the FAA's statement that their determinations "in no way preempts or waives any ordinances, laws, or regulations of any other government agency or body."

1.1.1 Study Structure

This study analyzes the inter-relationship of heliport development, government and public attitudes, and methodologies employed by heliport proposers to determine stumbling blocks to facility implementation and to recommend alternative approaches. It first investigates the nature of the public approval/implementation process by providing insight into the nature of the public decision making process and the thinking behind traditional approaches. It then presents two approaches to heliport implementation. One approach is the *Systematic Development of Informed Consent (SDIC)*. SDIC is a *top down* approach resulting from research and evaluation of the public decision-making process (section 3.0). The next approach is based on the results of a workshop held with persons experienced with heliport implementation (section 4.0). The workshop strategies are more of a "practical" approach for managing interaction with the public and government officials. Because results from the workshop originate from traditional implementation practices, they are evaluated in light of research into the nature of the public decision making process and SDIC in order to better define recommended approaches.

In section 5.0, six case studies of actual heliport approval processes are presented to promote an understanding of critical elements and procedures significant in determining the success or failure of heliport/vertiport projects during the approval process. Both the successful and unsuccessful approval processes are evaluated within the framework of the two types of approaches. The final section of this study provides information and offers strategies to assist heliport proposers in counteracting influences that often frustrate the implementation process.

1.1.2 Data Sources

Information for this effort is drawn from three primary sources. First, from research into the nature of public decision making during the implementation process. Second, from data collected in six case studies of actual heliport approval processes. Lastly, from interviews and discussions with key personnel from various sectors of the helicopter industry and all levels of government involved in heliport implementation. Much of this data was acquired through participation in the "FAA Heliport/Vertiport Approval/Denial Workshop," conducted by Scientific Applications International Corporation, Air Transportation System Division (SAIC/ATSO) at the 1994 Helicopter Association International (HAI) convention, "HeliExpo" held in Anaheim, California. Those participating included helicopter manufacturers, helicopter and heliport operators, and professional heliport consultants; FAA national, regional, and local personnel; state aviation officials; and urban planners (see "Acknowledgment" page iv for names of those who participated).

2.0 THE PUBLIC APPROVAL PROCESS

In the United States, the decision to develop any facility such as a public-use heliport/vertiport is made through a public decision-making process. The proposers of such a facility need to obtain the review and approval of one or more decision-making bodies before they can proceed with implementation of the facility. Many other types of proposed public facilities or services are also required to go through the same or similar processes. However, the details of the process and which decision-making bodies are involved will vary with the nature of the proposed facility and within which governmental jurisdiction(s) the proposed project is to be located.

The public bodies that are involved in reviewing new public facilities most often reflect the concerns, issues, and attitudes of the constituents they represent. Often these public bodies are either the local governing body or a special purpose board, or commission, such as a zoning board. The review process is usually designed to hear from the general public and specific interests who perceive that they may be adversely affected by a proposed new facility or service. Those groups and individuals are usually not among the same group of people who will be users of the facility, or who will benefit from the use of it.

While the proposers of such new facilities usually develop sound technical analyses for planning, location, and design of the facility, their analyses are often challenged. Furthermore, other factors and issues are often introduced by those groups and individuals who perceive that the new facility is *not* in their best interest. In many cases the factual issues can deteriorate into purely emotional ones due to attitudes and possible misperceptions based on information from other sources. This type of situation has been a real source of frustration to the proposers of vertical flight facilities. This study presents and analyzes several different but related strategies to addressing these public issues and concerns. These strategies include:

- improving public relations and education programs,
- improving understanding of the underlying characteristics and nature of these public concerns and issues,
- improving understanding of public involvement processes, and
- applying lessons learned from other functional planning activities to address public issues and concerns.

2.1 APPROACHES TO CHARACTERIZING PUBLIC REVIEW PROCESSES

The public processes used within urban areas to site and approve major transportation, or other public facilities, can often be rather complex and contentious. The 1968 National Environmental Policy Act (NEPA) has tended to formalize those processes and make them relatively consistent from area-to-area and state-to-state.

There are several ways to characterize such public review processes. Legal and administrative methods tend to rely on identifying specific steps, their sequence, and which steps need to be followed to emphasize due process concerns, and follow the intent of laws, regulations, requirements, and guidelines. Political science methods tend to view the different interest groups and their influence and power with the formal and informal decision makers, as well as the degrees of authority and responsibility of the decision makers. There are also other views, or perspectives, such as sociological, social psychological, economics, etc. No one perspective seems to capture all the dynamics of the public decision-making review process. However, some researchers and analysts have investigated improving the general understanding of what it takes to get a program, project, or idea implemented through such public review processes. Others have investigated what the effective means of public or community involvement are in the decision making process, so that the views and concerns of different public blocs and individuals are heard and dealt with meaningfully. This work has provided a better understanding of the nature of the public review process, which, in turn, lays the groundwork for improved methodologies for working within that system.

2.2 THE NATURE OF PUBLIC REVIEW PROCESSES

The public review process for proposed heliport/vertiport facilities usually consists of interaction among three groups:

- *reviewers*, who generally can be viewed in an intergovernmental context,
- *proposers*, who can generally be viewed in a public-private context, and
- *affected interests*, who consist of a wide range of both individuals and groups who perceive they are affected by one or more aspects of the proposed facility.

It is necessary to understand the distinction among these groups and their roles during the facility approval or denial process in order to evaluate the potential success or failure of the methods presented in this study.

2.2.1 Reviewers in an Intergovernmental Decision Making Arena

There are usually several levels of government involved in the proposed heliport/vertiport facility review process—Federal, state, regional and/or a special authority, and local. More than one agency associated with each of these levels of government may be involved. Often, particularly at the local level, one part of the government is proposing the facility and one or more other parts are acting in a review capacity.

2.2.1.1 Federal

For aviation facilities, the Federal Government is represented by the FAA. This agency primarily deals with airspace requirements and sometimes funding and grant approvals. They

also deal directly with safety and heliport design if the facility if publicly funded. FAA approval is necessary but, not sufficient by itself, to plan and locate a new heliport/vertiport facility. Different divisions within the FAA are responsible for the airspace, design, and funding approvals.

2.2.1.2 State

Depending upon the state, there may be state funding involved, as well as some system planning, regulatory action, permit approvals, or licensing that is required. The responsible agency may be the state Department of Transportation (DOT) and/or a separate agency. As with the Federal government, state approval may be necessary, but not sufficient to approve or ensure construction of a new heliport/vertiport facility over the authority of the local government.

2.2.1.3 Regional and/or Special Authority

Depending upon the nature of the proposal and the particular urban area, the regional Metropolitan Planning Organization (MPO) that meets the requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 may need to be involved. One (or more) special purpose public authority or commission may have some jurisdiction with respect to reviewing the proposed heliport/vertiport. In some situations, a special purpose authority may actually be the entity proposing to implement the heliport/vertiport facility.

2.2.1.4 Local

This level of government is where the most critical reviews are usually performed. Also, the local government usually makes the key decisions to use a general location or particular site for the proposed heliport/vertiport facility. Ironically, it also appears to be the level of government that is least well understood by groups supporting the implementation of heliport/vertiport facilities. Local decision makers are often locally elected officials, who usually have staffs that provide support for their activities. In some instances the decision makers may be appointed officials, such as a Zoning Board. Alternatively, the decision makers may be agency heads or key staff, who have been delegated administrative authority by local law to review and approve proposed facilities.

One of the subtleties associated with review processes at the local level is that it may be necessary to explicitly account for the distinctions between the legislative and executive branches of government. Often it may be part of the executive branch that is proposing the heliport/vertiport facility while it is the legislative branch, or an independent appointed regulatory or review board, that is conducting the review. When locally elected officials are directly involved, it enables them to carry out one of the purposes for their being elected—that of evaluating and making tradeoffs among competing public objectives that also may be interdependent with various private interests. Such local political decision-making processes are designed as a means of formulating what is the appropriate public interest from a local perspective.

Another aspect of decision making at the local level is that the review and approval may revolve around the use of general purpose taxes levied by those officials. In these instances, there usually is a prescribed process that needs to be followed. That process cuts across all agencies and is generally achieved as part of the capital and/or operating budget approvals.

2.2.2 Sponsoring the Proposed Heliport/Vertiport Facility

Most of the transportation systems in the United States are a blend of private and public activities. Individuals drive their private cars on public highways, roads, and streets; private intercity buses and trucking companies use those same roadways; quasi-governmental Amtrak passenger trains use the private tracks of the railroads; private ships and barges use public waterways; and private air carrier airplanes use airports that are almost always publicly developed and owned. Most of the urban transit systems are now fully publicly operated. However, it was not too long ago when there were many private transit systems throughout the nation that operated on public roadways and/or private tracks as franchises in accordance with regulations of Public Service Commissions.

In a like fashion, the proposers of heliport/vertiport facilities need to recognize the particular blend of private and public activities and interests that are involved. It is also expected that the particular mix of the blend will vary from state-to-state and urban area-to-urban area just as the blends vary for each of the other transportation systems. Which blend is best for a particular locale is basically seen as a matter of local values, custom, and taste. Local citizenry feel this process should not be prescribed because it is one of those things that makes each urban area unique.

Several items related to these public-private relationships need to be clearly understood in heliport/vertiport planning, in particular:

- exactly who is the proposer or sponsor of the facility;
- what mission, or purpose, do they have in mind for the proposed facility; and
- how does that mission coincide or differ from the broader public interest or various other private interests.

2.2.2.1 Proposers and Sponsors

There are many private-use heliports on private property that are used by the owners to operate their private helicopters in and out of *publicly* regulated airspace. On the other hand, air taxi, air carrier helicopter service, and future vertical flight scheduled service are expected to use public-use heliports/vertiports at each end of their trip and along their routes.

While it is expected that private companies will provide the helicopters and aircraft, it is also expected that various public agencies or authorities will be the providers of the heliport/vertiport

facilities. This is similar to the current relationship between airlines and government agencies and authorities in providing air carrier service and airports. It is conceivable that private companies could provide some heliport/vertiport facilities that can service the general air carrier traveler and thus be direct sponsors of proposed heliport/vertiport facilities. Another possibility for future large heliport/vertiport development may be a public-private partnership such as that of Alliance Airport in Texas, as a method of creative financing. However, in most cases, it is expected that it will be a public agency or authority that proposes a public-use heliport/vertiport facility and that the agency or authority will own the land and/or operate the facility.

There is a potential "chicken and egg" dilemma here because, first, most private companies will not develop extensive helicopter/CTR air carrier service without firm commitments from enough public agencies to provide the landing facilities; and second, most public agencies will not propose to plan for and implement a facility unless they have firm assurances that private companies will provide the actual air carrier service.

To avoid this dilemma it is necessary to establish cooperative relationships, and perhaps even some formal understandings or contractual agreements. In this situation, one of the partners will be the actual proposer of the facility, and the other will be an actual or de facto co-sponsor. However, such relationships and agreements may tend to blur the distinction of who exactly is the proposer from the perspective of other interests who become involved in the review processes.

2.2.2.2 The Purpose or Mission of the Proposed Heliport/Vertiport

One aspect of the public-private relationship that can become critical to the outcome of the review process is that of the *purposes, objectives, or missions* that the proposer and/or co-sponsor ascribe to the proposed heliport/vertiport facility. Private companies may see the opportunity to provide air carrier service at a profit and have that as the objective. Alternatively, they may have in mind that the main purpose of the service is to act as connecting feeders to longer-haul air services. In other instances, the mission may be to rely on the heliport/vertiport as a reliever for a nearby major airport.

The local proposing agency, on the other hand, may not necessarily have the same set of purposes, objectives, or missions in mind. For example, the local agency may be more interested in the potential economic development opportunities in the general area and see the heliport/ vertiport as a means to that end. Therefore, it should be noted that:

> *Which purposes, objectives, and/or missions that are put forth by the proposer as the reason for acting on the approval of the proposed heliport/vertiport may be a major factor in whether the proposal is acted upon favorably.*

2.2.2.3 Perceived Degree of Consistency Between Those Missions and the Broader Public Interest and Other Private Interests

As identified previously, the public bodies involved in reviewing a proposed heliport/vertiport facility most often reflect the concerns, issues, and attitudes of their constituents. The review processes are usually set so as to hear from these constituencies and from the general public who perceive that they may be affected by the proposed facility.

Those groups, and the reviewing officials, often critically assess the expressed purpose of the proposed facility *to determine for themselves* whether that purpose seems to be important enough to warrant and offset the potential adverse effects that the facility may have upon them.

Unfortunately, the groups who perceive that they may be adversely affected by the proposed heliport/vertiport do not usually consist of the group of people who will be users of the new facility, or who will benefit from it. Consequently, it is less likely that the groups who perceive that they may be adversely affected will agree that the intended purposes of the facility are important enough to obtain their support. Therefore:

> If the *proposing agency can clearly demonstrate that the purpose or mission to be achieved by the proposed facility is consistent with the public interest, there is less likelihood of strong opposition.*

And, conversely:

> *If the purpose of the proposed facility is expressed to serve primarily private interests, or only a very narrow set of public interests, then there will be a greater likelihood that the proposed facility will be more strongly opposed.*

2.2.3 Potentially Affected Interests

In addition to the reviewers and the proposers, there are many individuals and groups who will actually be, or who perceive they will be, potentially affected by a proposed heliport/vertiport facility. These *potentially affected interests* consist both of a wide range of individuals and groups who perceive they are affected by one or more aspects of the proposed facility, and those who *for some reason of importance to them*, want to, or need to, be involved. The term *interest* is used to mean any individual or combination of individuals, group, company, agency, or institution that tends to have a unique set of values. Generally speaking, the decisions that interests make are based upon and reflect their values. When people or groups make decisions or give their recommendations or opinions, they generally have searched out or thought about alternative options and then chosen the course of action that most fulfills or represents their values.

The public review process provides a formal opportunity for the various interests to express what they value and what course of action ought to be followed regarding the proposed heliport/vertiport facility. Many interests also use informal channels of communication to convey their viewpoints across to the reviewers and decision makers as well as to the proposers. One of the ironies of the public review process is that the subset of the general public that becomes the *potentially affected interest(s)* for a particular proposed heliport/vertiport facility is somewhat self-selecting. In other words, *it is the interest groups themselves who decide that they will experience a negative effect from the facility* and therefore decide to oppose the proposed project. The subset of potentially affected interests may differ somewhat from one proposed facility to the next. However, the *challenge* to the proposers of the facility is that:

> *virtually any <u>one</u> of the potentially affected interests can, if they choose, muster enough resources and support to cause the reviewers in essence to veto and defeat the proposal.*

The following sections discuss methodologies for dealing more effectively with the public decision-making process.

3.0 SYSTEMATIC DEVELOPMENT OF INFORMED CONSENT (SDIC)

There are many techniques and approaches of public involvement in the planning and implementation of transportation facilities, services, and public facilities in general. The Federal Highway Administration (FHA) and the Federal Transit Administration (FTA) jointly released a notebook that contains a set of 14 leaflets, each briefly describing a different technique of public involvement suited both to metropolitan and statewide transportation planning (reference 2). That notebook is intended to serve as a guide for transportation planners, citizens, public officials, and transportation providers. It is primarily intended to illustrate various techniques that can be followed in systems planning for transportation at the metropolitan scale. These and other techniques and general approaches are also used at the individual projects level.

One such approach to improve public involvement is called the Systematic Development of Informed Consent (SDIC). This approach is taught by the Institute for Participatory Management and Planning, a private company developed by Hans and Annemarie Bleiker. The SDIC approach is based mainly on case studies and research performed on challenges that were being experienced by highway agencies with implementing proposed highway projects in the late 1960s and early 1970s.

3.1 BACKGROUND

A large amount of sound *technical work* has been done to plan, locate, design, build, and operate public-use heliports/vertiports throughout the United States. While some sites have been approved and heliports constructed, plans for the majority have been denied and no facility built. This section discusses how improved *public involvement work*, as well as *sound technical work*, can be applied to the planning and approval phases of heliports and vertiports through the application of the SDIC.

SDIC stresses the need for heliport/vertiport proposers to do public involvement work, as well as sound technical work, in order to more successfully locate and complete heliport/vertiport facilities. This study advances SDIC as an excellent approach to understanding public decision making processes. SDIC is further used as a framework for assessing the methodologies recommended by the FAA Heliport/Vertiport Approval/Denial Workshop (section 4.0), as well as the results of the heliport/vertiport public review processes presented in the case studies (section 5.0). Using SDIC as a framework assists in addressing the main purpose of this study—that of identifying key elements significant in determining success or failure during the heliport/vertiport approval process and proposing recommendations for improving the heliport construction record.

3.2 TRADITIONAL APPROACHES TO ADDRESSING PUBLIC CONCERNS AND ISSUES

As a background, there have been different approaches used in the past by the proposers of heliport/vertiport facilities to forthrightly address the various concerns raised by groups and individuals who perceive that such a facility could, or would, be adverse to their interest. Those approaches have tended to be centered around providing improved analyses and information, such as statistics on the relative safety of helicopters and lack of accidents at heliports, or on comparative noise studies of helicopters relative to other noise sources. Increased attention to how helicopters are actually operated in an urban environment led to the "Fly Neighborly" (reference 3) program, as an effort at improved public relations. A basic thought being followed by heliport/vertiport proposers using this approach seems to be:

> *If only the opponents of the facility knew what I know about it, then they would agree that providing the facility is a good idea.*

As heliport proposers gained experience with this approach, they learned that they did not gain widespread support by simply telling the public all about heliports and helicopters. The approach evolved into attempting to determine what the public concerns and issues were and endeavoring to address them.

This section evaluates the approaches and methodologies used during facility approval processes to gain an improved understanding of the *underlying characteristics and nature* of the public concerns and issues being raised regarding heliport/vertiport development. In fact, the case study locations were selected in part because of the expected lessons to be learned at those locations regarding public concerns. The case studies analyze factors ranging from the proposed location and size of the facility to the attitudes of public officials and private citizens, in order to see what affect those factors appeared to play in the review process. It appears that the basic thought of heliport/vertiport proposers is:

> *If only I better understood what the opponents of the facility know and feel about it, then I could provide them with improved analyses so that they would then be able to agree with me that providing the facility is a good idea.*

However, the *critical concept* behind the SDIC is *informed consent.* The difference in basic thought using informed consent is that the approach that *could* be followed by proposers of heliport/vertiport facilities is expressed in the following:

> *If only I could determine all the groups and people who perceive they would be affected by the proposed heliport/vertiport, then I could:*
>
> - *involve them in attempting to address their concerns,*

- *show them that I understand and care about these perceived negative effects,*

- *recognize that while it would be helpful to provide them with improved analysis and information, I do not need to get their explicit or implicit support or agreement that my idea is a good one, and*

- *understand that I only need their implicit informed consent not to oppose my viewpoint that providing the facility is an important thing to do.*

3.3 SDIC THEORY

While the handbook associated with the SDIC approach identifies numerous specific techniques for citizen participation, it also stresses that the combination of techniques selected by the planners should depend on the particular *objectives* of the planning effort. Thus the terminology of Citizen Participation by Objectives (CPO) is also often associated with this approach. A paper by Berthelsen, recently presented at the National Conference on Community Involvement for ISTEA (reference 4), succinctly summarizes the SDIC approach:

> Systematic Development of Informed Consent is a process by which agencies, proposing projects or actions *in pursuit of their missions*, search out elements of society most likely to be affected, to get *consent*. The process concentrates on those most likely to be in extreme opposition; however, *it does not seek to build support, only consent*.

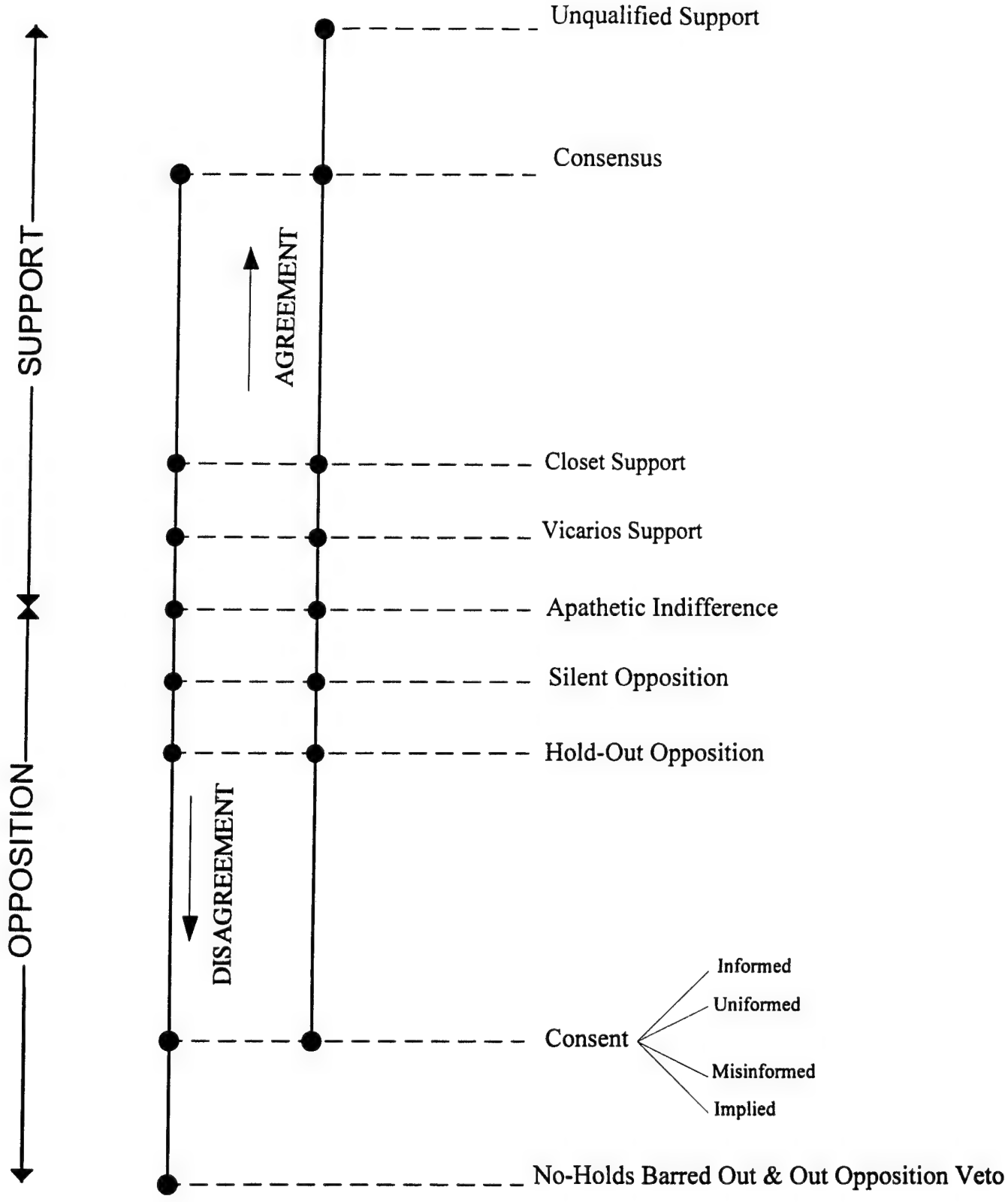
To better understand the SDIC approach and how it may be applied to the study of heliport/vertiport case studies, three concepts are briefly discussed:

- the agreement - disagreement scale,
- the differences between *consent* and *consensus*, and
- acting in the interest of another—not just one's own.

3.3.1 The Agreement - Disagreement Scale

The proposers of a project often tend to first characterize the potentially affected interests by whether they are basically in agreement or disagreement with the proposed project being implemented. However, they often begin to make finer distinctions as to the degree of agreement or disagreement that different interests seem to display. Bleiker has developed an Agreement - Disagreement Scale (reference 5), an adaptation of which is shown in figure 1.

The scale has two extremes. The first is that of full agreement where there is unqualified support. The second extreme is that of full disagreement, characterized by a no-holds-barred, out-and-out opposition, using every attempt possible to veto or stop the project. Between the two extremes the scale can be divided into three basic sections:



Source: Reference 5. FIGURE 1 AGREEMENT - DISAGREEMENT SCALE

- support,
- apathetic indifference, and
- opposition.

Within the support section, in addition to the unqualified support of full agreement, there are different degrees of support such as *qualified* support, *closet* support, and *vicarious* support. Within the opposition section, in addition to full disagreement, there are several different degrees of opposition such as *silent* opposition, *hold-out* opposition, and *varying types of consent*. The following sections clarify the differences between consent and consensus.

3.3.2 Differences Between Consent and Consensus

As shown in figure 1, consent is a form of opposition to a proposal. Consensus, on the other hand, is a form of a *high degree of support* for a proposal. Sometimes the word consensus is used to denote a simple majority, but more often it refers to a rather broad level of agreement among many interests. In particular, consensus is often achieved among those interests who may have more individual influence on the outcome of the proposal, as well as those that make up a large majority of the interests. As previously stated, consent is a form of opposition to approval. When a person or group consents to something, they are not saying that they agree with that thing, only that they will not try to stop it from happening even though they oppose it. In essence they are saying or thinking something like:

> *While I disagree with what you are proposing, I will consent to you going ahead at this time because...*

As shown in figure 1, there can be several types of consent based mainly upon the quality of information available to the potentially affected interests about the proposal:

- Uninformed consent happens when interests have no awareness that something might occur as a result of the proposal, and if they did they probably would react differently.

- Misinformed consent happens when, intentionally or unintentionally, interests are given bogus information about the proposal.

- Informed consent happens under two conditions. First there must have been a thorough and open disclosure of relevant information about the proposal. And second, while certain interests may be in disagreement with the intent of the proposal, and may explicitly say so, they nevertheless agree not to oppose the proposal from being implemented.

- Implied consent happens when an opposing interest is aware of the proposal and how it might adversely affect them, but takes no action to try to stop the proposal from being implemented.

It is a main premise of the SDIC approach to public involvement and decision making that the proposers of a project need to focus their attention to *systematically develop informed consent* from all those interests who are likely to be in opposition.

3.3.3 The Interest of Others in Conjunction with Self-Interest

The proposers of a project who are applying the SDIC approach, need to be aware of being perceived as using the approach in a manipulative manner. Needless to say, to use the SDIC approach in a manipulative manner would be unethical.

One way to avoid this perception is for the proposer to not only have their own self-interest in mind, but to also attempt to listen to and to understand the concerns of all of the potentially affected interests, particularly those most in opposition and disagreement with the proposal. This is consistent with a popular approach to effective interaction among people advocated by Covey in his "Seven Habits of Highly Effective People" (reference 6). Habit five states, "seek first to understand before trying to be understood." It may be possible for the project proposers to modify their approach in some way to account for the concerns of various opposing interests. Even if that can not happen, perhaps just the giving of "psychological air," that Covey speaks about, of having been heard enables opposing interests to consent to the proposal proceeding towards implementation.

3.4 ELEMENTS OF BUILDING INFORMED CONSENT

The following discussion focuses on applying SDIC ideas and concepts. It borrows heavily from summaries prepared by Berthelsen and Bleiker (references 4 and 5). The application starts with the realization that all it takes to stop a proposed project, such as locating a heliport/vertiport, is a tiny minority of people who perceive that their interests will be seriously damaged by the proposed project. Often the proposed project is stopped by other agencies whose missions are in conflict with that of the proposer. Therefore, the *public involvement task* of the proposing agency is to first seek out as many interests as possible, from both the public and other agencies, that believe their real, or perceived, interest will be damaged, and second, to involve them in the development of the project as early as possible. The proposer needs to take some risk and invest effort in being serious about the public involvement process. Involvement means:

> *giving the potentially affected interests a real and sincere shot at affecting the process, with the proposer taking their advice when it makes sense to the proposer.*

It should be stressed that involvement does not mean:

> *giving affected interests de facto decision making authority over the proposal.*

Rather, involvement from the proposer's perspective should be a process of building informed consent. There are four basic elements of informed consent that the proposer needs to follow so

that through the involvement of all of the affected interests, each one becomes convinced that the proposer is:

- addressing an important problem,
- the responsible agency to address the problem,
- using a reasonable process and approach, and
- understanding and caring.

Usually most proposing agencies are good at doing the *technical work* needed to analyze and evaluate the specifics of the proposal. They tend to be thorough and rigorous and they often work hard to become even more thorough and rigorous. *Public involvement work*, on the other hand, are those activities necessary for the proposing agency to implement the plans based on the technical work.

Unfortunately, many agencies that use rigor in the technical work tend to use ad hoc, seat-of-the-pants, unsystematic approaches to the public involvement work. According to Bleiker (reference 5), this usually results in:

> *rigorous technical plans that run into political and legal brick walls and is the single biggest reason for the relative ineffectiveness of agencies to implement their plans.*

In order to obtain a better understanding of these four elements of building informed consent listed above, the following brief elaboration is provided.

3.4.1 Addressing an Important Problem

The potentially affected interests need to feel that the proposers are addressing an *important*, even *crucial* problem that must be solved. The proposer must address the question of, "Why are you doing this?" such that the importance of the proposal, relative to the problem, is clear to the affected interests. The idea is discussed in more detail in section 2.2.2.2 above.

3.4.2 The Responsible Agency to Address the Problem

The potentially affected interests need to recognize that the agency solving the important problem has a legitimate responsibility for doing so—that is part of their function or mission. Furthermore, it would be irresponsible for the proposer not to address the problem or to walk away from it. Affected interests could be asked the question:

> *"If you had the responsibility for addressing this important problem, what would you do?"*

3.4.3 Using a Reasonable Process and Approach

The potentially affected interests need to feel that there is a *fair, legitimate, equitable, and reasonable process and approach* for solving the problem. Americans believe very strongly in due process. They can be willing to make sacrifices for the good of all, if the solution has been produced through a fair and equitable process. As noted by Berthelsen (reference 4) one of the ironies of these situations is, that when opponents litigate against a proposal, they almost always contend that the agencies are not following the process, thus lending the process even *more* legitimacy.

3.4.4 Understanding and Caring - Listening But Not Promising to Please All Interests

The potentially affected interests need to feel that the agency and staff have an awareness of, as well as a sincere *understanding and caring* about, the negative effects that the solution may have on them and other affected interests. However, since solutions often involve trade-offs among negative effects of one interest compared to those of another, *the proposer should not promise to please all interests.*

It needs to be emphasized that:

- these four elements of public involvement do not include that of building support, nor that of forming a consensus that a particular solution is a good idea;
- it is not necessary that the interests believe that the proposed project, program, or plan will leave them undamaged;
- in order to obtain the consent of the potentially affected interests, *the proposing agency must be utterly candid about any damage the implementation of the proposal is likely to do to an affected interest;* and
- trying to avoid admitting that there are potential negative effects, or trying to sugar-coat them, is the worst approach the proposer can take.

3.4.5 Some Action is Better Than No Action

The premise of the SDIC approach is that if each of these four basic elements of public involvement work has been done well, then chances are that the plan, program, or project will be implemented. This is because the decision makers can come to the conclusion that:

> *although the proposal may hurt some interests, on the whole, the greater public interest is better served than by doing nothing about this important problem.*

It needs to be further emphasized that these four elements of public involvement do *not* include either building support or obtaining a consensus that a particular solution is a good idea. The proposers need to work with all of the potentially affected interests so that each interest is convinced that *doing something about the problem is better than no action at all*—to obtain their informed consent not to veto the proposal. This emphasis on *consent* is the key to implementation.

The basic conclusion of this section is that the combination of *sound technical planning work* and *effective public involvement work* significantly increases the likelihood that approval will be given to a proposed heliport/vertiport. Past efforts have tended to focus more on the technical work. This approach is presented through the concept of SDIC, which forms the framework for evaluating of the results of the FAA six case studies.

4.0 HELIPORT/VERTIPORT APPROVAL/DENIAL WORKSHOP

Section 2.0 presented a characterization of the approaches that have been taken by heliport proposers and section 3.0 suggested the SDIC as a potentially more effective approach. It is now valuable to consider strategies taken from the experience of people who frequently deal with heliport implementation processes, whether as a heliport *proposer* (helicopter industry, proposing agency, etc.) or as an *approver* (governmental authorities). These are practical strategies used in interaction with the public and local government officials during the approval process. Presentation of these approaches also expands the assessment framework for a more complete evaluation of how and why the actual processes presented in the case studies were or were not successful. These strategies are assessed based on the research into the nature of the public decision making process and informed consent in order to refine and reconcile recommended approaches.

4.1 BACKGROUND

Attendees at the "FAA Heliport/Vertiport Approval/Denial Workshop," conducted by SAIC/ATSO, at the 1994 HAI convention, "HeliExpo" in Anaheim, California, encompassed a broad range of persons active in heliport development. These attendees included the helicopter industry, helicopter manufacturers, operators, heliport operators and sponsors; consultants whose main business is to assist heliport sponsors; helicopter trade organizations; NASA; port authorities; and perhaps the most important to the purpose of the workshop, urban and transportation planners, government officials from cities, states, and local FAA who deal with heliport implementation (see page iv for a list of participants).

This workshop was a step forward in a larger FAA effort to explore and better understand the heliport/vertiport planning and approval process. Its purpose was to reach out to those who deal with heliport development on almost a daily basis to identify the methods they use to achieve their goals, as well as where the roadblocks are and how to address them. The success of the workshop was not that any one brilliant sure-fire method was discovered. Rather, it focused on positive ideas and approaches that have worked and it did not rehash all the old clichés regarding why it cannot be done. Reflecting this positive approach, perhaps the most important thought that came out of the workshop is the statement that:

> *"...getting a heliport implemented is the result of doing a lot of little things right, and few things wrong."*

This section presents the results of that workshop and provides insight into *doing little things right*.

4.1.1 Pre-Planning

The first step for individuals undertaking to sponsor a vertical flight facility is to identify the government agency(ies) that are *in fact* responsible for sponsoring and building a facility. The

sponsor must find out where the official authority for approval in the local government is, and in particular, who within that agency has authority. Each city may have a different political authority structure. For instance, in some cities the city council has the approval authority and not the mayor. In others cities, the city manager may have the final say, while in still others the approval authority may be with planning boards, or even one committee of the planning board. The sponsor should also find out and understand the political powers and key people with general influence in such matters. In some instances the de facto authority may lie with a charismatic individual who does not show up on the organization chart. Sponsors must do their homework and become involved in the community to truly understand where the official and unofficial authority resides.

No matter where the ultimate authority resides, it is important to talk to local government community planners to identify any plans that they may have for the general or specific location in question. In other words, find out what is going on in the city before announcing plans for the heliport. Identify which agencies need to be contacted to learn about planning and land use within local government agencies, and do not overlook committees within the city council.

Stress *intermodalism* to local governments and coordinate heliport plans by incorporating connections with ground transportation. Also consider *multi-use* facilities. Many of the workshop attendees believed that unless a heliport is run in conjunction with another money-making facility, such as a parking garage, convention center, etc., and/or provides multi-modal transportation, it would not be possible for an *elaborate* stand-alone heliport facility to survive financially. Many of the workshop attendees also believed that a stand-alone facility has a better chance of survival if it is simple, sells fuel and provides other services such as flight training. It improves chances of surviving if a landing fee can be charged, and if the owner/operator does not have excessive profit expectations. In addition, both intermodal and multi-use facilities can be called something other than a *heliport* such as a "transportation center," which reduces negative emotional reaction, as well as reduces the *visibility* of the heliport in the community. This is also an example of incorporating the heliport into a facility serving a broader public purpose, giving it a broader mission and more importance because it does more than one thing thereby also broadening its support within the community (see section 2.2.2.2).

Many local agencies have clearly stated plans and agendas as well as some not so clearly stated, that often do not include heliports. It is important to identify the town, city, or county plans and agendas, and carefully describe how a heliport can enhance that agenda. This may take some creative thinking, but it is critical from the local perspective.

Develop methods to address environmental issues, never dismiss them by saying they are unimportant or do not exist. It is possible that environmental issues can be contrived concerns to block projects, but recognize that environmental problems are real concerns to the majority of people and are becoming increasingly important at all levels of government, including the Federal level.

4.1.2 Continuing Efforts

4.1.2.1 Build Support

It is important to know where the support for the heliport is and build as much support as possible. Cultivate solid *political and business* community support. Local politics may reflect the general public, but business is likely to get special attention due to its importance in the community's economy. If at all possible, find one or more *champions* for the project in the local government and/or business community. A champion is someone who is willing and able to articulate the ways in which the heliport would be valuable to the community. The champion does not have to be especially powerful or charismatic, but it is best if he/she is resolute.

Obtain support from national and local helicopter organizations such as HAI, Professional Helicopter Pilot's Association (PHPA) (Los Angeles), Eastern Region Helicopter Council (ERHC), Mid-Atlantic Helicopter Association (MAHA), etc. Organize the strategy so that pressure can be taken off the politicians regarding development and operational issues. Good examples of such successful organization are Vancouver's Harbor Society and Portland, Oregon's Northwest Rotorcraft Association (NWRA) (discussed later in section 4.2).

While the workshop participants stressed the importance of building support, there was also strong recognition of the critical need to identify the groups, and in some cases individuals, who are in disagreement with the proposers. This is discussed in detail in section 3.1.4.

4.1.2.2 Educate at Every Opportunity

Educate both the supporters and particularly those who are in disagreement with the proposal, at every opportunity. The local helicopter organizations may be able to provide helicopter rides to city officials and representatives of groups in disagreement in order to provide realistic operational experience and knowledge. Many people are unfamiliar with helicopters, few have ridden in them or seen one close up. This lack of familiarity tends to promote a fear of the unknown. Helicopter demonstrations, discussions and rides for school children are also invaluable. If people grow up having had the opportunity to see a helicopter close up or even touch it they will be less afraid.

There may be local colleges or universities whose engineering or city planning department faculty and/or students can provide third party educational material. For example, Georgia Tech was very active in promoting a demonstration helicopter for the 1996 Atlanta Olympics. These institutions may also be able to provide computer simulations using geographic information systems (GIS) for land use planning and site selection. But it is vital that the simulation be of real world situations, *not* idealized pictures of what the sponsors would like it to be.

In Los Angeles, the PHPA developed a "Helicopter Appreciation Day," which is another example of this educational approach. The local operators volunteered to display their aircraft for the public to view, touch, or sit in. At first it was free to the public. But the event has been

so successful that the PHPA is able to charge a minimal fee to help pay the expenses. A helicopter ride is raffled off as a "door prize." One advantage Los Angeles has in this effort is that the morning traffic reports are provided by helicopters. One local helicopter pilot who did traffic reporting become a mini-celebrity. His radio station actively promoted Helicopter Appreciation Day and he attended the function and flew the helicopter for the winner of the ride. Also an additional advantage for Los Angeles is that they have access to *famous helicopter movie stars* like "Airwolf." However, the public still attends Helicopter Appreciation Day, even if the pilot traffic reporter and Airwolf are not always available.

4.1.2.3 Positive Public Relations

The most critical aspect of public relations is *to be honest*. This point cannot be stressed enough. The public will find out if they are not being told the truth and will not believe anything the heliport proposer says after that. This means, do not say that helicopters are not intrusive, are not noisy, and/or there will never be any accidents. Instead, include in your plan how these features will be handled and/or mitigated. For instance, give statistics on chances of accident. One popular statistic is that within 1 mile of facility the likelihood of an accident is once in every 400 years (reference 7). Another possibility is to show how the access/egress routes will lie along an existing corridor that already has a large amount of noise, such as a freeway, an industrial area, or railroad, along a relatively unpopulated area such as a river. A video tape of the approach is a good method of demonstration. Another example, where applicable, is to make a video tape of the effect of helicopter on livestock, if that is an issue. This will either prove to the public that the helicopter has no effect, or prove to the heliport proposer that helicopters do have an effect. The proposer can then develop and present solutions to mitigate the problem.

Support and promote public service operations in the community by initiating or assisting with emergency planning practices. It is even better to have good publicity for these events. For example, to promote emergency planning, let persons in the media play "the wounded." This allows them to participate in the community and possibly receive personal recognition. The helicopter ride may reduce their fear and prejudice against helicopters. The most important advantage is it provides them with a positive slant on a helicopter/heliport related story that may reduce disagreement for heliports. It may also highlight a broader public purpose and mission for helicopters and heliports.

Another critical aspect of both public relations and dealing with local officials is to expect that it will be necessary to modify the proposal in some ways so as to meet the concerns of the reviewers or of those in disagreement. Some may view this a "compromising" the proposal. However, from a positive public relations perspective, it is a way to show understanding and agreement in some of the concerns of those in disagreement with the original proposal. If the heliport proposer is hard-nosed and obstinate he/she may end up with no heliport at all. It is critical to understand that the apparent opposition of the other person or group may be due to the limit of their authority, or to the fact that circumstances simply do not allow things to be done precisely the proposer's way. In these cases the proposer should see if his/her position can be modified.

4.1.2.4 Benefits to the Community

Stress the benefits of the heliport to the community. One of the best benefits that can be offered to a community is the availability of helicopter emergency medical service (EMS) and disaster relief. These are excellent selling points. However, these benefits alone *may* not be enough in some locations. This argument was not sufficient to convince officials in San Francisco of the need to develop public-use heliports, even after the disastrous 1989 Loma Prieta Earthquake in which helicopters from the surrounding area provided essential disaster relief activities. Communities want more, preferably tangible economic benefits. It also helps to have a good reason for a heliport; for instance the Vancouver heliport provides a faster alternative to the water taxi service from mainland Canada to Vancouver Island.

The proposer must sell helicopters and their services to the community. Enlist the aid of other business people. Business related services that provide direct value to the community are often more real and convincing to the average citizen than a future possibility of disaster relief. Show how a heliport will serve the city and its citizens. Outline how the heliport can provide income to the city not only from possible increased business opportunities, but from taxes, utility use, and potential jobs.

4.1.2.5 Control Your Own Fate

The heliport proposer should not try to hide from the media. If the proposer seeks out the media then he/she is more likely to be able to influence stories. Timing is important, it is better to initiate a story on how a heliport will benefit a community, at the early stages of the proposal, than to respond to a negative story about the heliport will invade the community. However, do not jump the gun. Even a positive story about a heliport that the city officials do not know about is potentially very harmful. View the media simply as just another potentially affected interest. Seek them out so as to understand their concerns, and they will be less likely to print negative or untimely stories.

4.1.2.6 Be an Active Member of the Community

An important consideration that is not always understood by heliport sponsors is to become an active, familiar, and contributing member of the community. This point is noted in "Public Relations - An Investment," published in Rotor, Winter 1993-1994 (reference 8). This is more than helping out with helicopters during a disaster, or suddenly trying to make friends right before you want to develop a heliport. Support and promote public service organizations. Join community organization like *Lions Club*, or the *Chamber of Commerce*, etc. Heliport and helicopter operators need to let people get to know them. It is much less likely that the community will want to close the business down when they know the owner personally and understand that the heliport and the operator contribute to the community.

4.1.2.7 Ease a Heliport Into a Community

It was suggested in the workshop that one method of establishing a heliport is to *ease it* into the community. Start with a small private facility. Expand, if and when desired or feasible, after the heliport has proved to be compatible with location, operationally successful, and economically viable for both the owner and the community. Furthermore, it was estimated that a large facility takes at least 2 years in the planning stage and another 5 years before completion. It is best to start small and work up, or keep expectations low. Also, understand the possibility that the heliport and/or surrounding property is likely to have high long-term value. When land nearby is developed, the heliport may be pushed out.

4.1.3 Roadblocks

The workshop participants indicated that little problems can become big problems and stop development completely. Such things as neglecting to coordinate with local fire officials or not being able to obtain security can interfere with or block implementation. Additional mistakes that halt development of heliports are to land without permission during the approval process or to announce a heliport project before anything is approved or notice is given. This can mean a sign on the property , an article in a newspaper, or even an industry newsletter. This scares people, *makes them feel out of control of their lives and environment.* This type of action is consistent with the perspective given previously in section 2.2.2.3. Virtually any one of the potentially affected interests can lobby the reviewers to veto and defeat the proposal.

Other roadblocks can include business or aesthetic goals of the city or community itself. There are some areas where heliports can never be built, and other areas where it is relatively easy. The heliport proposer needs to evaluate the location to see if the effort is worthwhile.

Heliport development can also be stopped by factors that have no relation to heliports whatsoever. Various types of *agendas* can block development (see section 3.1.3.2). Examples include different planning goals or personal feuds among city leaders, politicians, or offices. The proposer should know about adopted or pending city plans if he/she has done the right homework. The personal or private agendas may be more difficult to identify, but understanding the community through personal participation in community activities may provide some insight.

4.1.3.1 Community Differences

Experts attending the "FAA Heliport/Vertiport Approval/Denial Workshop" were asked the question, "Why are some areas amenable to heliport development and others not?" The attendees proposed the hypothesis that *in general, areas amenable to heliports are pro-business, particularly those areas looking to attract Fortune 500 level business, and areas opposed to heliports are anti-business.* Although this statement is a hypothesis and may not be the only reason, history does indicate that it is quite applicable.

New York, Dallas, and Phoenix are cities that are accustomed to helicopter operations. New York has had active public-use heliports since the 1950s. Bell Helicopter and American Eurocopter have been in the Dallas/Fort Worth area for years. McDonnell Douglas Helicopters is a relative newcomer to the greater Phoenix metropolitan area but is recognized as an economic advantage to the community. The Phoenix metropolitan area also actively seeks Fortune 500 level business.

Examples of cities that do not support heliports are San Francisco and Washington, D.C. Although San Francisco was once a magnet to headquarters of major corporations desiring to move out of New York City, many of the major businesses have now moved out of San Francisco due to lack of physical space plus financial and tax reasons. The main *business* of Washington, D.C. is government, and this is not generally amenable to headquarters of Fortune 500 businesses.

4.1.3.2 Agendas

Recognize potential problems associated with different *agendas* of each of the potentially affected interests. There are several types: hidden, private, and competing. A hidden agenda is when people say one thing yet have a completely different objective in mind. A private agenda is when one city official or office has a personal grudge against another and will not accommodate this person on any issue. This type of situation may quickly halt development of a heliport unless the problem is identified and a way found to circumvent the problem. An example of a competing agenda is where the heliport sponsor wants to build a facility along a river but the city has plans for a river park at the same location. A careful heliport proposer should identify all competing agendas at the beginning of the planning process through coordination with city planning officials.

4.1.3.3 Common Problems, Unique Approaches - "Bingo Card Approach"

In discussing heliport implementation circumstances, two seemingly contradictory situations are often mentioned. First, that *each area is unique;* and second, *the same issues are always present.* The workshop discussed why this paradox occurs so frequently.

It became evident through the discussion that the *unique* situations exhibit recurring problems. The same basic elements seem to always come up such as noise, safety, environmental factors, etc. Yet, because *not all possible issues arise at every location* and because the authority centers in the community and approaches taken by the proposers are often different, each situation also seems unique. Furthermore, how the proposers address these issues may require different and sometimes imaginative approaches that make them unique. A good example of this is Portland, Oregon (section 4.2). The usual issues of noise, environmental compatibility, and financial support were involved. Yet the proposer's approach and solutions to the problems were unique.

This apparent contradiction was referred to as the "Bingo Card Approach" by one workshop participant. This means that certain topics have the *potential* to become issues at every location

but there is no guarantee that every one will become an issue. Like the numbers and letters on a bingo card, only some will be *called* to become issues in each situation. However, this means, that the heliport proposer must be prepared to address every potential topic on the *card* in a manner appropriate to the location where the heliport is proposed. It is the combinations of issues that come up, and the way they are addressed, that are often unique. Table 1 provides a list of key issues most often raised by opponents. Another way to view this is that the "Bingo Card Approach" is consistent with the self-selecting nature of the potentially affected interests, discussed in section 2.2.2.3.

TABLE 1 KEY ISSUES RAISED BY OPPONENTS

- Noise
- Safety
- Environmental:
  - emissions
  - air and water pollution
  - hazardous wastes, etc.
- Invasion of Privacy
- Property Values
- Lack of Local Control
- Land Use/Zoning Compatibility
- Cost to Tax Payers
- Little or No Economic Benefit to the Community

Source: FAA Heliport/Vertiport Approval/Denial Workshop, 1994.

4.1.4 State and Federal Government Issues

All data and indications point to the fact that the *local government approval process* is where most heliport/vertiport implementation tends to be stopped (see section 1.1) (reference 1). Yet the other levels of government, state and Federal, cannot be overlooked. The workshop provided some insights into these government bodies.

4.1.4.1 State Government

Not all state governments are involved in heliport development. However, some states require approval or registration. Sometimes the heliport proposer mistakenly believes that the state government approval can override problems at the local level. This is not true. Representatives from the state DOT Divisions of Aeronautics who attended the workshop wanted to emphasize that heliport proposers should generally line up local approvals first. States cannot, or will not, override local rejection of a heliport project. However, to avoid having a locally approved solution that does not meet state approval criteria and have the state avoid the local approval, the

proposers should informally seek out the concerns of the state approval official concurrently with the local review process. Heliport proponents should also be aware that some states can arrange for funding or loans for various phases of facility development.

4.1.4.2 Federal Government

Federal government involvement in heliports/vertiports is a function of the FAA. The FAA can provide assistance with heliport design and airspace issues and can provide funding for up to 90 percent of the facility through AIP funding. Heliport proposers attending the workshop brought up some interesting considerations regarding FAA involvement. The first issue concerned AIP funding. They felt that *there had been too many studies and not enough heliport building*. This observance was particularly interesting because the FAA had observed the same phenomenon. This is also one of the reasons this effort was undertaken and the reason for the workshop—to find out at what point in the process between the study and real development that the system is not working. Another factor regarding AIP funding is that requirements imposed for receiving the AIP funds can make local governments feel a loss of control. The local government must assure that the heliport will remain a heliport for 20 years. Many local government officials are hesitant to tie up urban land for that long. This may reduce the desire to back a heliport project involving AIP funding. Further problems expressed by heliport proposers were that *some* of the FAA regional heliport coordinators displayed a lack of interest and/or knowledge of heliports, and had no particular interest in supporting a proposer.

The FAA responded that they are willing to be involved in the education process of both inexperienced heliport proposers and the community leaders/officials. However, like the state government, the FAA cannot solve all community problems or override negative judgments. The inability to solve all proposers problems with the local government may be discerned as lack of interest by proposers. In addition, the FAA cannot do the proposers job. The public heliport supporters need to investigate and seek out the extent of potential support and the concerns of those in disagreement. Furthermore, the FAA can only provide *neutral* support and cannot take sides. They can provide information to the proposer and attend meetings to clarify *mis-information* that often develops. However, as with the state officials, the proposers should informally seek out the concerns of the FAA officials who will be responsible for reviewing and approving the proposal, concurrently with the local review process. The Dallas case study shows the importance of this, see section 4.1.3.1.

4.2 SUMMARY OF EFFECTIVE ACTIONS

This section provided guidance to enhance success of heliport implementation based on the experience of those who deal with these issues on almost an everyday basis. The range of persons who provided the information includes helicopter operators, manufacturers, associations, heliport consultants; Federal, state, and local government officials; as well as those involved with vertical flight at NASA. The key is to focus on *positive information* rather than all the reasons why heliport/vertiports cannot be established. Table 2 provides a summary list of effective actions derived from the FAA Heliport/Vertiport Approval/Denial Workshop.

TABLE 2 SUMMARY LIST OF EFFECTIVE ACTIONS

- Be Honest—Address Issues
- Identify *REAL* Authority Center in Community
- Build Support—Find Champion in Business Community and/or Local Government
- Educate—at Every Opportunity, *NOT* Just When a Heliport is in Question
- Apply *POSITIVE* Public Relations
- Define Detailed Benefits to the Community
- Be an Active Member of the Community
- Details—Do a Lot of Little Things Right
- Be Aware of *AGENDAS* (hidden, private, and competing)
- Recognize State & Federal Approval Does NOT Supersede Local Approval
- Work Concurrently With Local, State, and FAA Officials
- Make Sure Local Government Knows Before Announcing Plans Even With Sign
- Give Media a Positive Story (AFTER local officials know)
- Start Small, Build Confidence, Then Expand, *IF* Feasible
- Be Ready to Understand and Address the Concerns of Those in Disagreement

Source: FAA Heliport/Vertiport Approval/Denial Workshop, 1994.

5.0 CASE STUDIES - SITE INVESTIGATIONS

Six case studies of actual heliport/vertiport development processes are investigated in detail in this section to illustrate strategies that are both successful and unsuccessful in establishing a facility. The discussion in section 2.0 on the nature of the decision-making process, *Systematic Development of Informed Consent* (SDIC), as well as the approaches based on the "FAA Heliport/Vertiport Approval/Denial Workshop" discussions provided in section 3.0, provides a framework for more knowledgeable observation and evaluation of these actual situations. The case studies are evaluated within this framework in section 5.7.

Developing an in-depth understanding of the approval/denial process requires an evaluation of both outcomes and process. Although the *basic* indicator of success or failure is straightforward, i.e., *success* if the vertical flight facility is constructed, and *failure* if it is not, real-world situations are more complex and cannot be so easily categorized. For instance, heliports are planned yet encounter stumbling blocks that may, or may not, be overcome. On the other hand, some locations establish heliports that are later closed, but do not rule out the possibility of another facility in the future, etc. Study of a range of success and failure develop insight into more realistic scenarios that provide lessons for the future.

The case studies analyzed in this study were selected to provide a range of success/failure. The sites selected are: Dallas, Texas; Portland, Oregon; Miami, Florida; Pittsburgh, Pennsylvania; Washington, D.C.; and San Francisco, California. The current status of heliport development at these locations is listed in table 3. This section describes and evaluates each location, the heliport's operational history, development history, development process, lessons learned, and associated issues and concerns.

TABLE 3 CASE STUDY LOCATIONS

Location Investigated	Status of Development
Dallas, Texas	Vertiport Constructed
Portland, Oregon	Heliport Constructed
Miami, Florida	Heliport Constructed at International Airport
Pittsburgh, Pennsylvania	Heliport on Hold
Washington, D.C.	Heliport Closed
San Francisco, California	Heliport Approval Denied

These case studies were performed as a background for the investigation of the approval/denial process. They were prepared through on-site visits, meetings, and telephone interviews with people directly involved in the heliport's development.

Each case study asks the following questions:

- How easy, or difficult, was it to get the facility built?

- What were the stumbling blocks and how were they managed?
- Were any innovative methods used that can be applied elsewhere?
- What were the problems at the locations where a facility was not approved?
- Could these problems be overcome by applying different strategies?

The answers to these questions provide insight into the process of heliport approval and the methodologies applied.

5.1 DALLAS, TEXAS VERTIPORT

5.1.1 Site Description

The City of Dallas, Texas has constructed the first facility to be formally designated a *vertiport*. It is an elevated facility built over the Dallas Convention Center. It is referred to as a vertiport because it is designed to ultimately accommodate the first civil tiltrotor (CTR), but in the meantime it is being used as a heliport. It was designed to have two takeoff and landing surfaces (TLOFs) large enough to accommodate two Sikorsky S-76 size helicopters, or one TLOF when used as a vertiport based on the dimensional requirements of the CTR-22C, which at the time, was anticipated to be the first CTR. Expansion of the vertiport is linked to the expansion of the convention center. As new sections of the center are completed, more space will be provided on which the vertiport can expand. The lighting is configured to accommodate either the two TLOF heliport or the one TLOF vertiport as required. The change can be made by an attendant in the terminal building. There are plans for instrument flight rule (IFR) approaches and departures when they are needed. Fuel is not yet available at the site although plans have allowed for it. The installation of fuel facilities will cost about a half a million dollars. There is a belief that more corporate helicopters would use the facility if fueling were available.

The terminal building has conference rooms, a lobby, and an elevator to the ground. While fuel is not yet available, it could be dispensed from either a fuel truck or an enclosed tank system already designed into the building structure, as demand dictates. There is a vehicle ramp from the ground to the vertiport for service and supply vehicles and emergency access. A small package and delivery service could use the ramp for distribution vehicles.

The Dallas Vertiport is a successful example of heliport development. This is based on the fact that it was completed, that it is the largest facility of its type in the world located in a downtown area, that the planned expansion will allow it to accommodate the first CTR when available, and that its use is increasing. In addition, it is both multi-use (because the convention center can be considered a complementary economic support base) and it is multi-modal. Passengers will be able to connect to the Dallas Area Rapid Transit (DART) light rail/bus station currently under construction at the convention center (reference 9).

5.1.2 Operational History

The Dallas Vertiport was opened in January of 1994. It is considered by the FAA to be the first *vertiport* opened in the United States. There were about 1,800 operations at the facility in 1994 and 1,968 in 1995. The missions most associated with the vertiport include electronic news gathering (ENG), law enforcement, corporate executive, flight training. There have also been VIP flights for several congressmen, the governor, and Marine One (the helicopter of the President of the United States) used the vertiport during a presidential visit (reference 9).

The vertiport is presently managed by the City of Dallas Aviation Department. It is available for use 24 hours a day, 7 days per week. It is manned from 7 a.m. to 10 p.m. and lights are kept on all night. To land when the staff is not there requires the helicopter operator to check in with the city to make arrangements for someone to turn on the elevator to leave the heliport. Security is supplied by the convention center security staff, but otherwise the convention center is not involved in operations. The vertiport is in Class B airspace (formerly terminal control area (TCA)) and operations require coordination with air traffic control (ATC).

Expected sources of revenue are from conference room rental, vending machines in the terminal building, and a landing fee when there are enough operations to warrant the charge. It is anticipated that it will cost $185,000 per year to operate, but it is stressed that this is an estimate. It is expected that operational funding will come from the Aviation Department's Enterprise Fund and user fees that will not involve use of general tax funds. There have been no subsidies except for the FAA AIP development grant.

5.1.3 Development History

The Dallas Vertiport took 11 years to complete. This length of time was due more to the time required to develop such a large project of a new type than any "show-stopping" obstacle. The idea began with the first Dallas heliport study performed in 1984 that identified demand for a heliport in downtown Dallas. The development process was unusual for a heliport as there was no public opposition. The project and public meetings were announced in the usual manner but only one person came to the meeting and he was in favor of the project. The heliport cost $18M of which $12M was for land even though it is an elevated site. This expense was part of the arrangement with the convention center to help pay for the land needed for the expansion.

5.1.3.1 Development Process

Three possible sites were identified by the first heliport study. When the city then performed a site selection study, each of the first three sites selected was ultimately rejected. The first was near the school book depository a block from downtown, a site on the national register of historic places due to the Kennedy Assassination. This site was also near a residential area and an outdoor restaurant. The second site was near a jail on the wrong side of the freeway for easy access to downtown, and near high power electric lines. The third site was on a parking garage between two viaducts.

At this third site, there were plans to build a high rise building extension on the parking garage. The owners had the air rights to this location. The garage is associated with the Reunion Avenue development and the Dallas Mavericks team. In any event, the owners wanted the garage empty when they needed it. Some people felt that pressure was put on the local government to reject these sites because private developers wanted them for other purposes, but any pressure that may have existed was "quiet" and never became a public issue. The full City Council did not take a proactive role in pushing to continue to look for other sites because each of the first three sites had politically unacceptable constraints associated with them. The acceptability of sites to the land owners was weighted very heavily in the decision-making process. This also reflects the very strong influence of these interest groups in local political decision making.

Coincidentally, the expansion of the Dallas Convention Center was announced. The convention center site turned out to be a better location for a proposed heliport than the original three sites. The site is close to downtown and it enhances the convention center amenities. The convention center had some concerns about noise and the proximity to the exhibit hall. Sound proofing and damping to reduce vibration were installed. Interest in constructing the vertiport in conjunction with the convention center came primarily from the city's aviation department and from the local FAA Southwest Region. The Helicopter Directorate at the Southwest Region made an administrative decision to promote heliport development. There was also some concern expressed from a nearby TV station with a heliport facility regarding potential conflicts in approach patterns, but a solution to that concern was worked out.

The North Central Texas Council of Governments (NCTCOG) helped encourage the City of Dallas to build a heliport. Bell Helicopter and American Eurocopter, both located in the area, strongly supported the idea. Surprisingly, the local helicopter association, Metroplex Helicopter Association, showed little interest and less response and support. Although support from certain individuals in the city government was pivotal to developing the vertiport, there was no real interest from the city government as a whole. It was said that some very highly placed people in the city government may not know of the heliport's existence!

The construction at the site also coincided with the study of a potential vertiport/heliport system from central business district (CBD) to CBD that has been advanced with the "Southwest Region Vertiport Feasibility Study," (reference 10). This vertiport study was supportive of the facility but was published after all key decisions had been made by the city of Dallas regarding the vertiport's development.

Southwest Airlines expressed mild concern about the aviation department's funding of the heliport. Southwest is based at Love Field in Dallas, which the Dallas Aviation Department runs, and they feel they should have some say in what the department does. However, since Southwest provides high-volume, low-cost service, and the CTR would provide low-volume, high-cost service, it appears that Southwest does not view a potential CTR or helicopter system as a significant business threat. Conversely, some have suggested that a CTR system would not be in competition with Southwest because Southwest would operate it.

The Dallas heliport/vertiport conceptual designs changed 10 to 15 times as aircraft, site, and construction criteria evolved. Much of the design criteria came from Bell Helicopter, including performance and aircraft specifications particular to the CTR. Those involved in the design stated that the "design was planned for the future, then 'backed-up' for present needs."

The only major difficulty in completing the vertiport was funding. The FAA wanted to provide the AIP funds for the heliport in three phases, but these phases did not correspond with the phasing of planned convention center development. A delegation of vertiport supporters went to Washington, D.C. and were able to obtain the money in one lump sum for construction of the first section.

The use of Federal money resulted in an accounting predicament with local construction companies because Federal law dictates use of specific labor rates. To accommodate legal requirements during construction, the contractor and the City of Dallas designated which areas were *heliport* and which were *convention center*. In some cases this required having to mark a line on the columns that designated which part was heliport and which convention center. In some cases the same construction worker would work half a day at one rate and half at another.

No market was defined for the vertiport before it opened other than that identified by the study performed 11 years earlier. At present there are no plans to market the heliport beyond an enhancement to the convention center. The city feels users will know about the facility from third party publicity (e.g., helicopter industry magazines) and because it is on the FAA charts. No real explanation was provided as to why there is no interest in marketing the vertiport. There is likely to be more demand when/if the economy improves. But the feeling is that scheduled vertical flight service is a long way off. There are eight other private heliports in Dallas developed for specific uses (news, corporate/executive, etc.). The vertiport is near City Hall and businesses. There is potential for multi-modal activity with rail, truck, bus terminal, and limited automobile access. The facility is now considered multi-modal because of the DART station at ground level but this was not pertinent at the time of site selection investigation. An additional benefit of the vertiport is the security it is expected to provide to VIPs arriving and departing convention center activities.

5.1.3.2 Lessons Learned

The Dallas Vertiport is unusual due to the lack of public opposition to the final site. This may be because of a unique advantage that Dallas has over other metropolitan areas: The "Metroplex" has grown with the helicopter business. Both Bell Helicopter Textron and American Eurocopter are located in the area and helicopters are regarded as an economic stimulus. Many people at all levels of economic status have worked for, or been associated with, the helicopter companies. This may mean that there less public mistrust and dislike for helicopters and that they do not associate helicopters as strictly benefiting the rich and famous as do some other areas.

Another explanation for the lack of opposition might be the land use mix and patterns of the Dallas CBD, with the absence of any significant residential land uses. This is typical of "newer" southwestern and western major cities and not typical of "older" eastern and midwestern cities. One of the initial sites was near residential developments and this was a factor in the rejection of that site.

There were two opinions regarding the difference in cost of an elevated versus ground level facility. One opinion stated that an elevated heliport is less expensive because the cost of land in urban areas drives up the price of a facility (construction on top of an existing structure, in theory, means there are no real estate costs). However, the heliport did have to share real estate cost in this case. The other opinion stated that the Dallas Vertiport would have cost less if it had been constructed at ground level due to the complex structure on which it is located. There is agreement that public relations are better for an elevated site, because it reduces the impact on land use around the site. A ground level heliport would require development restrictions due to operational impact on surrounding land use and the need to protect airspace. In addition, both the facility and the aircraft using the heliport are much less visible to the public at an elevated site.

5.1.3.3 Issues and Concerns Addressed

The Dallas Vertiport final site had little public opposition or extraordinary public relations fanfare surrounding its implementation. It took 11 years to develop, but the delay appears to be mostly routine for such a complex political and governmental project. There were challenges and several times it looked as if the project would be canceled, but it kept progressing. There were no specific issues that had to be addressed for the "public" or other agencies. However, the discussion above makes note of nearly two dozen different concerns of potentially affected interests; ranging from historic preservation concerns to labor rates of construction workers. The sponsors of the proposal were flexible in how they addressed the concerns of the many interests. The most threatening problem was the payment structure of the initial AIP funding that was resolved. However, it must be emphasized that there were elements in the City of Dallas, as evidenced by the direct involvement of the City Council, that really wanted the vertiport constructed. If this had not been so, it is unlikely that it would have been built.

There is some concern that there is insufficient operating funding support for the Dallas Vertiport and that ultimately it will fail without private support. This concern is based on a fear that the general public will not support subsidizing the "high end" of an "elitist form" of transportation. However, given the attitude of those in the Metroplex area regarding helicopters and the low visibility of the site, this negative attitude may not develop.

5.2 PORTLAND, OREGON HELIPORT

5.2.1 Site Description

The Portland, Oregon Heliport is considered successful. It is an elevated facility located on the top floor of a four-story municipal auto parking garage in west central Portland. It is in close proximity to the Willamette River in the area generally referred to as "old town." The heliport has a single TLOF that can be approached from four directions. It has a conference/meeting room and restrooms located on the southwest corner of the heliport. Auto parking is available on lower floors. The parking garage elevator provides access to the heliport. Security is provided by a key pad lock at the heliport so that only those with business at the heliport have access.

The heliport is considered a success because it was constructed near the main port of downtown and it is active. It is multi-modal because there is access to the Portland light rail transit system at ground level. It is also located within a 5 minute walk to office buildings in the downtown area. The co-location of the heliport with the parking garage also means that it is multi-use, making it more politically and socially supportable by both the city and the public than a stand-alone heliport might be. A unique aspect about the Portland heliport is the process through which it gained approval and the funding arrangements for its construction and operation.

5.2.2 Operational History

The Portland heliport is unmanned, however, volunteers from the Northwest Rotorcraft Association (NWRA), the local helicopter organization, take responsibility for its operation and maintenance. The heliport is open 24 hours a day, 7 days a week. The operators estimate that there are an average of 8 plus operations per day, approximately 3,000 operations per year, with the summer months being the busiest time of the year. The missions that use the heliport are corporate transport, ENG, and some patient transfers for a hospital located five blocks away. The difference between revenues and expenses is raised through annual donations from operators and users through the efforts of the NWRA.

5.2.3 Development History

Construction of the heliport began in 1988 and the facility was dedicated April 29, 1989. The heliport was financed through both Government and private money. The Federal Government provided $1.3M from the AIP fund and private donations equaled $130,000. Construction costs included paying for an additional floor on the parking garage and a pro rata share of the building footings and elevator. The heliport is owned by the City of Portland, Bureau of General Services, which is also the owner and operator of the parking garage.

5.2.3.1 Development Process

The heliport was the result of an 8-year development process. It began with a study to identify a heliport site that would accommodate demand expressed by the local helicopter operators. Another reason for the study was that the heliport that had operated at Second and Jefferson Streets since 1970 had tall buildings encroaching around it. About one dozen potential sites were considered. The study initially recommended a site on the east bank of the Willamette River on a floating platform. However, this site was poorly received by several community and environmental groups and they threatened legal action.

At the time the study was being conducted, the city administration identified an objective to create more auto parking in the "Old Town" section on the west side of downtown Portland to stimulate commercial activity in the area. A site in Old Town, formerly occupied by a taxicab company, was vacated at about this time. The study committee, made up of helicopter operators, as well as environmental and neighborhood interests, obtained local professional land-use planning assistance to re-focus the planning effort. The committee had been appointed by the City Council who took a direct interest in the conduct of the study. A public meeting was called to help the committee in their evaluation of the sites. Sentiment on building a heliport drew favorable testimony from "users, neighbors, the League of Women Voters, and even the environmental 'watchdog' groups." (reference 11). It is significant that the assembled interests had no objections to the final heliport site due to the cooperation among them to find a site suitable to all concerned.

The result of the working groups was a proposal to develop a heliport on the top floor of a municipal parking garage, recognizing the logical fit of the two facilities. The heliport at Second and Jefferson was allowed to remain open until the garage site was operational. While FAA funding greatly enhanced the facilities at the heliport, it is believed that the heliport would have been built even without such aid due to the enthusiasm of the NWRA. In fact, the only question regarding stopping construction was due to the parking garage and *not* the heliport. Portland has restricted automobile parking to limit the number of cars in the downtown particularly for commuters (reference 11). The problem was resolved and the facility built, however, the operation of the parking garage was a cause of concern to city officials for a few years after it opened. The garage has been the slowest of the garages to meet its expected parking demand of shoppers and visitors to downtown. To have sufficient revenue from the garage, it has been necessary to accept a fair amount of commuter parking, contrary to the desired policies of the city to limit commuter parking. Recently, there has been more retail and commercial redevelopment taking place near the garage resulting in more visitor and short-term shopper parking use.

Finding the local match for the FAA funding became a critical aspect of the approval by the City. Several key members of the City council were reluctant to use city capital or operating funds for the heliport. At one point a motion was made to table the decision over the local match issue. They probably would not have received final approval except for the very quick and timely commitments made by the NWRA and its members to provide the local match as well as on-

going funds for operating the facility. The NWRA believes that the primary selling point was that it convinced the city that there would be no need to use city funds either in the development or operation of the heliport. This assurance secured city cooperation in siting the facility.

The heliport sponsors also approached the Port of Portland, the operator of the Portland International Airport, regarding operation of the heliport. The Port declined as they did not see it being compatible with their existing operations nor did they view it as generating enough revenue to become part of their overall program. However, the Port did actively support the establishment of the garage site as a heliport, and they could have been an appropriate facility sponsor with the local institutional context.

5.2.3.2 Lessons Learned

Several seemingly unrelated events proved critical to the successful establishment of the Portland Heliport:

- urban encroachment on the Second and Jefferson heliport,
- availability of a new site in Old Town, and
- the identification of a need for increased auto parking in the Old Town section.

The key to focusing these events into a project was a core group of *knowledgeable, persistent, individuals* in the helicopter community. This group tied together these seemingly unrelated events and created an opportunity for the heliport to develop. Key to their success was the ability to identify the broader benefits of the facility to the community so as *not to appear self-serving*. They were involved enough in the community to know the political process *and personalities* and made certain to brief key officials before any public hearings or formal requests for support. The approach taken in the site selection effort *redefined the study in a land use context*, not as a "heliport siting effort."

This heliport development approach, to seek out more suitable and less intrusive sites, established credibility with the groups that had been threatening legal action and created an environment in which a heliport could be considered by these groups. In working together, a site acceptable to all concerned was identified. Proposers recognized that a heliport is an undesirable land use for the great majority of people and focused on finding a site distant from residential and recreational uses. By combining the heliport with the parking garage, the *constituency for both facilities was enlarged and became much more effective* in dealing with the city and other regulatory agencies.

Without question, the key commitment of the core supporters was to eliminate any requirement for the expenditure of City of Portland funds. This removed the burden of some tough fiscal choices from the politicians. At one point in the process, this commitment required several individuals to obtain personal loans for the local matching share required to secure FAA AIP

funds. Though the matching fund loans were subsequently paid back through private contributions from local businesses, hospitals, individuals, and other organizations, without the core group's commitment, the AIP funds would have been lost. An additional key element was that, due to the involvement with the community, the bank approved the loans because of trust between individual personalities.

In addition, the commitment of the NWRA extends to on-going operation of the heliport including inspecting and cleaning. The NWRA also continues to raise funds to meet their commitment not to require any city funds. This aspect of volunteerism is unique and the exact process may not be reproducible in other locations where heliports are proposed. However, the commitment and dedication of a core group of knowledgeable proposers, the ability to frame the heliport development in a public service context, the commitment to resolve compatible land use siting, and their involvement in the whole business community, are elements of the Portland experience that appear to be critical to the success of any heliport/vertiport development.

5.2.3.3 Issues and Concerns Addressed

Noise. Local residents raised the noise issue during the approval process. This issue was addressed in public meetings and hearings with standard technical analyses. However, the final site selection mitigated this issue by locating the heliport in a predominantly commercial, urban setting, allowing the noise analysis to document minimal impact. Relocation of the proposed heliport from the river site to the garage site actually convinced neighborhood groups that the heliport would improve the helicopter noise situation by requiring them to fly more compatible routes to the garage site. The NWRA has continued to address the noise issue in their operation of the heliport through the establishment of a "Fly Neighborly" (reference 3) campaign and a 24-hour "Hot Line" for noise complaints. There was only one complaint made about noise during the initial operating period several years ago.

Land Use Impact. Environmental associations were concerned that the heliport might impact the riverfront greenway that has become a highlight of downtown redevelopment. The original study location placed the heliport in an area earmarked for recreational use. This choice of site would have *logically* precluded convincing anyone that helicopters were compatible with such a use. The poor choice of several of the initial site alternatives was a major reason for the loss of credibility of the original study. The identification of an elevated location with non-conflicting land uses in the approaches and compatible, existing land use in the area addressed this concern. The "Old Town" area also has no tall buildings and, to help maintain the historical status, development controls have been put in place that will restrict heights of redevelopment projects. This should tend to minimize future encroachment by land use redevelopment.

Need for the Facility. The Portland proposers were members of the local helicopter association who defined the need for the heliport due to the planned closing of an existing facility. Combining the heliport with the parking garage was a logical fit that greatly enhanced the credibility of both projects. There was no question that both would be used by their respective constituencies. It is not clear whether either would have proceeded without the other. The idea

of a heliport gained acceptability with neighborhood groups when it was perceived as a part of a intermodal facility. It seemed *logical* for the heliport to be there and it changed the focus from that of siting a facility for helicopters to that of siting a transportation facility. This is an example of establishing a broader public interest, as discussed in section 2.2.2.2.

Safety. Safety was not raised as an overt issue as it has been in other areas. Noise was the primary issue in the minds of the public as expressed throughout the process. However, it should be noted that noise can be an intangible, surrogate element for safety concerns. The subsequent heliport location provided four very good flight approaches over the Willamette River and adjacent highway and greenway open spaces, perhaps reducing the immediacy of any safety concerns. This experience illustrates the benefits of careful site selection and land use planning that has the best interests of the community as a goal.

Use of Public Funds. Commitment of the NWRA to raise their own funds for both development and day-to-day operation, as previously described, eliminated this issue.

Future Issues. The future of the heliport may continue to depend on volunteerism to operate the heliport. How long this commitment will last cannot be estimated.

A future concern is what will happen if high volume operations such as those associated with scheduled service were to occur. Would the impact of the facility on the community still be acceptable? At the present time such service is considered unlikely because there are no comparable facilities in primary downtown destinations of Seattle and Salem, the logical connections and destinations from this heliport.

5.3 MIAMI, FLORIDA INTERNATIONAL AIRPORT HELIPORT

5.3.1 Site Description

The Miami Skyport is located on the Miami International Airport. It is owned and operated by the Dade County Aviation Department. It opened for operation in December of 1987 and was officially dedicated in April 1988. It is located on the landside, apart from fixed-wing operations, near the main terminal entrance and automobile parking facilities. It is an elevated facility with two 72-foot diameter TLOFs, each of which can accommodate helicopters up to 30,000 pounds and/or a 48-foot rotor diameter.

Passenger services are located below the heliport surface and include a passenger lounge, restaurant, security area, and baggage-handling area. These services can be reached by stairway or elevator located between the two TLOFs. There are four moving elevated walkways that passengers can use to travel to the automobile parking garages, two from the airport terminal and two from the Skyport. Fuel is not available on the heliport but can be purchased from airport fixed-base operators (FBOs) at ground level.

The heliport was planned so that it could expand as demand grew to accommodate larger aircraft such as the Sikorsky S-61 and European Helicopter EH-101 by changing the two TLOFs into one. It was planned with a 700-foot rollway to be able to handle the Bell-Boeing CTR-22C (reference 12). If a CTR becomes operational, Skyport can be designated one of the first vertiports. The Skyport is lighted and navigation equipment could be provided if necessary. Currently, it is not required due to Miami's high probability (98 percent) of visual flight rules (VFR) weather.

For the purposes of this study, the Skyport is considered a success. It is successful because it was constructed and has been in operation for almost 7 years. However, it is not very active. It was positioned to be part of an active heliport network, if and when other south Florida locations also develop heliports. The sponsors of the heliport viewed that as an important problem needing to be addressed. This has not occurred and the heliport more or less stands alone. However, the potential for a network still exists due to relatively high helicopter activity in Florida, compared to most of the United States, and the continued interest in heliport development in some other south Florida communities.

5.3.2 Operational History

Although considered a "state-of-the-art" facility, the Miami Skyport is significantly under-used. In 1988 the heliport was open 24-hours a day and was estimated to handle about 40 operations per week (reference 12). As of 1994, the heliport was open from 8 a.m. to 10 p.m. but it served only about seven or eight operations per week. In 1995, the operations have decreased even further to a reported three to four per week. The under-utilization problem has become so severe that maintaining the equipment has become an economic issue.

Another consequence is that there are not enough operations to justify paying personnel to run the heliport. In addition to unlocking the facility and providing access to the terminal, someone with proper training must be on duty to operate the fire suppression equipment if necessary. When a pilot wishes to land at the facility he/she must contact Dade County and give 20 minutes notice for someone to open the facility. This can be accomplished through a radio frequency obtained from ATC. This creates inconvenience and delay and it has become easier to land on the ramp. The one person who used the heliport most often, actor Burt Reynolds, now often lands on the ramp and has a car take him to the terminal. When Dade County wishes to use or provide corporate VIP-type service, they charter helicopters from commercial operators. They do own/lease four to six of their helicopters for police, fire, and EMS.

Florida does have a higher number of helicopters compared to many other states. However, in this area helicopters are not frequently used for passenger transportation. Passenger transportation is likely to create more of a demand for heliports. Currently, the missions most of these helicopters perform are TV and movie production, EMS, police, fire, or other non-transportation uses. The county attributes the lack of use of Skyport to the fact that Miami is not a busy corridor, there is a low population density, the expected heliport system has not been built, and a lack of support from local helicopter operators. It was stated that the City of Miami

wanted to build a heliport, but due to the low population density they could not find a good demand center.

When Skyport opened in 1988, the goal was to have a system that "included Dade, Monroe, Broward, and Palm Beach counties to expedite air traffic while keeping helicopters over compatible land uses and providing safe autorotation areas" (reference 12). But the network of heliports did not materialize. There has been no real interest in developing a network. In fact, Dade County received AIP money for a vertiport study, but due to the lack of interest, the money was returned to the FAA. Dade County feels it went out on a limb to build the heliport and at that time there was no support from the local operators. The County is amenable to heliport development and feels that local operators could get more accomplished if they would ask for it.

The local helicopter operators also believe the heliport is under-used because a system did not develop. Another reason for the lack of use of Skyport is the restrictions on who can land at the heliport. The restrictions are that only turbine helicopters can land and that the pilot/operator must have $5M in insurance. The operators were told that the restriction on piston helicopters was due to noise reasons. This issue has been questioned since the site is already on an airport. Their complaint is that these limits mean that "wealthy student helicopter pilots meeting the insurance and turbine helicopter requirement can use the heliport while high-time pilots with piston helicopters and without the ability to afford $5M insurance cannot."

Operators stated that there have been times, after making prior arrangements to have someone open the heliport, that no one showed up. They also feel that heliports are easy to put on airports but the challenge is to put them into other activity center sites because of potential public opposition. The operators provided a slightly different perspective on two reasons for public opposition to heliports. First, "the public must put up with the noise yet few receive any benefit from the heliport" and second, "that the public has no control over the types of helicopter or the numbers of operations at the heliport once it is established."

5.3.3 Development History

The sponsor for Skyport was Dade County itself who owns and operates the facility. The purpose of the facility is to serve airport passengers by providing helicopter access. Skyport is directly connected with the terminal by the mechanical skywalk for a "seamless transition." The Skyport is well located and designed to potentially accomplish this purpose of intermodal connections for passengers using the facility. The director at the time of development was very interested in heliports and promoting a network in south Florida. Dade County received an AIP grant of $1.56 M, the Florida State Department of Transportation (DOT) provided the 10 percent matching funds, and the county provided the rest from its Capital Projects Program.

5.3.3.1 Development Process

Dade County has also built what they call "helicopter landing areas" at existing airports including Opa Locka and Tamiami, so there does not have to be a separate *notice to build* for future

expansion. Dade County also has planned a transport heliport at Tamiami Airport for their own air rescue and police and local FBOs. It is expected to be completed in 2 ½ to 3 years. There is also the Dade-Collier training facility and a runway that the Coast Guard and the Drug Enforcement Administration (DEA) use for IFR training. Building heliports on airports has meant that there have been no problems with public opposition or with local municipal government agencies and therefore no problems with the public to overcome.

The Skyport development process was significantly different from the other cases in point. The facility was sited on property already owned by the County. As such, the process was handled almost entirely as an internal administrative matter. It was not considered to be necessary to involve interest groups external to the county's Aviation Department. No potentially affected interests came forward by themselves. Perhaps any that might have, saw little adverse impact, or perhaps the lack of public notice may have left potentially affected interests unaware of the pending action. Furthermore, even the budgeting process for the Aviation Department, which could have become an entry point for the involvement of concerned interests, was probably unintentionally removed from any substantial public scrutiny. This was probably handled as one "line item" in a relatively large budget of the whole Miami International Airport.

Ironically, perhaps this unintentional lack of involvement by the general public and potentially affected interest groups may have partially resulted in a facility that is currently less than successful. Public opposition to a proposed improvement undergoing review by a public decision-making body often causes the sponsors and proponents of the improvement to sharpen-up their planning. That may involve performing or making additional analyses, designs, and assumptions, or considering alternative options. They need to do these things in order to obtain the consent of the opponents to sufficiently lessen their opposition or for the decision makers to grant approval of an alternative that is better than doing nothing. In this respect the challenge of undergoing an intensive critical review of the sponsor's plans often results in sponsors producing plans that better meet the objective of the proposed improvement.

Having a proposed improvement handled basically as an internal administrative matter can also run an increased risk of a less than adequate solution being implemented. If the idea is coming from the top or higher administrative levels of the organization, it is very difficult for more junior levels to critically question the assumptions or aspects of the proposed improvements. This too probably happened in the case of this skyport due to the high personal interest of the department director. While the low current operation of the Skyport results in it presently being considered as not fully successful, the facility is well sited, in-place and waiting to be a success if the right combination of operations can be found.

5.3.3.2 Lessons Learned

The county believes that the lesson learned with Skyport is that there must be a heliport system to generate demand. In addition, the operators believe local authorities go to extremes with multi-million dollar heliports. The Miami airport could have used the top of the parking structure as a landing place without all the *fancy* amenities of Skyport. Such a landing place

would have been less of a problem to use. What helicopter operators say they really want is just a clear area to drop-off and pick-up passengers. It was suggested that heliports with grass landing areas are easy on helicopters and less expensive. In addition, grass heliports can be made to look like golf courses. Therefore, they are less offensive to the public because they are more aesthetically pleasing and less visible. Of course a facility such as the Skyport, built to accommodate a high level of passenger operations and being located on airport property, could not have been a grass facility.

5.3.3.3 Issues and Concerns Addressed

There were no issues or concerns to be dealt with in Skyport's actual development process, because it was developed at an airport. The biggest problem now is the lack of use. As discussed above, perhaps this lack of issues at the time of the development process may have in part accounted for the current difficulty. Perhaps a broader review involving more groups at that time would have addressed the issue of likely operations (demand) and would have resulted in a design or location that may have enabled a higher number of operations.

5.4 PITTSBURGH, PENNSYLVANIA HELIPORT

5.4.1 Site Description

Pittsburgh, Pennsylvania does not have a public-use heliport, but the city has plans to develop one. Studies completed in accordance with FAA procedures resulted in the selection of a proposed heliport site. These plans are currently deferred because the city was not able to obtain the required level of Federal AIP funding.

During the several intervening years, other changes in the city may have created additional impediments. However, during the postponement, a potential new site being found that may be a better location. Although it is not certain that the city will build a heliport on the new site, the new site has its advantages. It is already owned by the city. It is located about a mile closer to downtown Pittsburgh and it would be a multi-modal facility, allowing the city to apply for funding through the DOT highway and transit administrations. The Pittsburgh heliport is a potential success, if the hurdles in the process can be overcome.

5.4.2 Operational History

The City of Pittsburgh has a low number of helicopter operations when compared to other metropolitan areas. The primary mission for helicopters in Pittsburgh is EMS inter-hospital transfers. Two operators provide EMS service. Three trauma centers and one burn center use EMS regularly. Two hospitals have based helicopters and three additional hospitals have helipads. There is minimal corporate use and no police or city helicopters. There is a private heliport on top of the U.S. Steel building.

A local corporation has offered to give a helicopter to the city police. If the gift is provided, that helicopter would be based at the county airport (until a heliport is built). The main problem in basing the helicopter at the county airport is that it would take the pilot and operational personnel excessive time to reach the county airport due to its location and the condition of the roads.

5.4.3 Development History

The FAA Eastern Region has stated that Pittsburgh "did everything right" with regard to correct procedure in their attempt to develop a heliport. The city completed a site selection study, the "Downtown Pittsburgh Heliport Site Location Study," in March 1987. It was sponsored by the Pittsburgh Department of City Planning (reference 13). A separate study sponsored by the Southwestern Pennsylvania Regional Planning Commission (SPRPC) encompassed Pennsylvania's six southwestern counties of Allegheny, Armstrong, Beaver, Butler, Washington, and Westmoreland. Pittsburgh is located in Allegheny County. These six counties also comprise the jurisdiction of the SPRPC. The study recommended the development of a publicly owned/public use heliport in or near the downtown area. The results of that plan were referenced in the "Pennsylvania Heliport System Plan," (reference 14) completed in April 1987. This plan examined the potential heliport needs for the entire state except for the SPRPC jurisdiction.

One of the goals of the Pittsburgh study was to recommend a site in downtown Pittsburgh. The only stipulation was that the site had to be ground level and outside but adjacent to the central business and financial area known as the Golden Triangle. That area is so named because it is located on the point of land created by the joining of the Monongahela and Allegheny Rivers where they become the Ohio River.

The SPRPC was involved through its membership on the site selection committee. The site selection committee was mostly a technical advisory committee consisting of agency staff but it included helicopter operators and civic and business interest representatives. Among the agency staffs were representatives of the City Fire Department, who were concerned with public safety issues, particularly those concerning the potential of fire at the fueling facilities.

More than a dozen sites were considered by the consultant performing the study. The evolution of the alternative sites relied upon identifying a set of important site attributes, assigning values (points) to the attributes, and then adding up the points. The site that did receive the highest number of points in that process was the one selected by the committee. The selected site, on the Monongahela River, was near, but not in, the Golden Triangle. A sand and gravel business is located at the site. The environmental assessment was completed and approved in 1990. Pittsburgh even revised its zoning ordinance to allow the use of helicopters in the city.

5.4.3.1 Development Process

The main reasons the heliport has not been built is because it did not receive FAA AIP funding in a lump sum at the time it was needed. In order to receive a sufficient amount of funds from the FAA, the proposed heliport had to compete with other requests from the AIP category that

funds general aviation (GA) airports. The amount of money required to build the heliport at the selected site may have also contributed to it not being funded because the amount equaled the state's entire annual funding. Obtaining the amount of money requested, plus having to compete for funds with all GA airport requests, is a very hard battle to win. During the early years the heliport was always the number one priority. In 1994 it was number two but still had not received any funding.

In addition, in order to build the facility, it was necessary to have the Federal funding in a lump sum to pay for moving the sand and gravel business that occupies the site. Due consideration was given to the idea of obtaining the AIP funds through a lobbying effort (see section 5.1.3.1). But the mayor in office at that time was not amenable to the idea. This was another factor in the delay.

During this period of time, the mayor of Pittsburgh died in office and the new mayor, who subsequently won an additional term, did not see it in the city's interest to support the proposed vertiport. Since that time, another election was held and another new mayor has taken office. The city planning department staff believe that the new mayor will support the heliport.

In the meantime, the original site has also been considered for riverboat gambling. Persons interested in developing this activity have offered to pay twice the value for the land that was estimated in the heliport site selection study, even though there has been no decision to allow riverboat gambling. Such a decision would require action by the Pennsylvania legislature and probably would also involve a local referendum. The legislature still has the idea under consideration. Even if gambling is not allowed, the large offer has driven up the price of that parcel of land for other types of development. Therefore, alternative sites are being considered by the City Planning Department.

One site is a parking structure much nearer to the downtown area than the previous site. This site could be developed for multi-modal purposes with the heliport on top. The site is being considered by the city for a "fringe parking" garage to serve commuters to downtown. It would be at a new station along the light rail transit system going to downtown. In addition, the City of Pittsburgh already owns the land and is endeavoring to obtain money from the DOT highway and transit administration to help finance this project. In addition, an elevated heliport at this location would be less expensive, less controversial, and would have a good transit access to downtown and would also be a short walk to a good portion of downtown. It is expected that development at this site could begin in the next 2 to 3 years if the transit and garage funding is approved.

This new site alternative will also have the effect of significantly lowering the expected cost of implementing the downtown heliport. The sand and gravel site, as proposed to FAA for funding, would have required about $8 million, about 90 percent of which would have been for acquisition of the site. A heliport on the roof of the fringe parking garage would add perhaps on the order of $2 million to the cost of the fringe garage. The garage would probably have approximately 1,200

parking spaces on 7 floors and would cost about $12 million without the heliport. The new station on the light rail transit line would cost about the same as the garage.

The city agencies involved with the fringe parking proposal, the Parking Authority, the Redevelopment Authority, and the Bureau of Economic Development want to first obtain approval of the transit and garage funding from DOT. After that, the question of adding the heliport could be considered and appropriate modifications can be made in the applications to FAA and the Pennsylvania Bureau of Aviation. However, the agencies do not want to tie the timing of implementation of the garage and transit to the availability of funds from FAA, given the history to date.

The fringe parking garage at this site may have also changed the feasibility of this site for a heliport from when it was previously considered during the heliport site selection process. At the time, the site was not considered feasible for a heliport at ground level due to the proximity of some bridges that cross the river. However, a heliport above the seventh floor of the garage would be higher than the bridges. The State's Bureau of Aviation will need to review that at the appropriate time.

The rooftop location also relates to the public safety aspects that were raised in the development process by the representatives of the Fire Department. That agency was concerned about the fire potential associated with the fueling facilities being considered in conjunction with the heliport. The Fire Department has taken a very conservative position that (1) any rooftop heliport must meet the national standards for the heaviest rotorcraft, and (2) those standards must also be used for any ground level heliport as well. Both of those standards are more stringent than those which would need to be followed under FAA procedures. Those stringent, local public safety requirements resulted in a substantial increase in the cost estimate for the sand and gravel site. Those relatively higher costs for a ground level site may have, in part, contributed to the difficulty so far in obtaining funding from FAA in as much as it created the need for the lump sum, which could not be realized.

5.4.3.2 Lessons Learned

Several lessons can be learned from the consideration to date of a downtown Pittsburgh heliport. One lesson is that alternatives that are initially identified in a site selection study may not necessarily include ones that can be found acceptable as a final site to all of the appropriate decision makers. In this case, the delay in securing funding at the Federal level may have provided the opportunity for additional alternative options to materialize. That may have also resulted in identifying a more approvable location for the heliport, as well as one that could operate better and more successfully. However, this is still conjecture and the site initially proposed for approval may still turn out to be the best site.

The approval process is being viewed by the sponsoring agency as a means of working with various groups in a somewhat incremental and sequential manner, rather than a fully comprehensive manner. That would enable the proposers to use the responses of the different interests to the alternatives to find ones that better meet the objective of the project and are less likely to be blocked

by potential opposition. That may also mean creating new sites and alternatives. A somewhat more incremental process is also being seen by the sponsoring agencies as an opportunity to reassess the factors and weights that may have initially been given to different evaluation factors. That would make it easier to have factors which better reflect the particular situation. In this case, the City staff now feels that more consideration should have been given to working with sites that are already under the control or ownership of the City.

Another lesson that this case clearly points out is that opposition to implementation does not necessarily only come from nearby residents being concerned with an improvement affecting their "back yard." Other agencies within the same level of government, or agencies at other levels of government, may find that the proposal does not meet the concerns of their mission. The Fire Department's very strong concern for public safety and not cost was one example. The FAA paying close attention to cost control and proper administrative classifications for the proposed heliport was another example.

A last lesson perhaps can be characterized as a need to have a strong proponent for the proposal who is seen as clearly being the appropriate group responsible for implementing the proposal. While the City Planning Department has perhaps been the most appropriate City agency to sponsor the heliport study, the absence of either a city department of transportation or aviation has perhaps lessened somewhat the ability to move the proposal further along than it has so far progressed. However, it usually is hard to create a new administrative unit just to address a new specific and needed mission. Rather, it is often necessary to rely upon an existing more general administrative unit to take on the needed responsibility to foster the implementation of a proposed idea.

5.4.3.3 Issues and Concerns Addressed

Several basic issues were addressed during the process of attempting to implement a heliport to serve downtown Pittsburgh. Cost and funding indirectly became the most important issue since the lack of a commitment to fund the proposal has been the main deterrent to implementation of the heliport. The City selected a site that would require a significant amount of funding from FAA due primarily to the land acquisition costs. The FAA, while supportive of the recommended site, has nevertheless been reluctant to allocate such a high proportion of their limited funds to serve only one location. The City is trying to be responsive to the issue and expects to identify the new and less costly site atop a new fringe parking garage. The lower cost estimate might enable the FAA to allocate a sufficient amount to this project.

Another public issue concerning heliports in Pittsburgh is noise, but this issue has a minimal impact for the downtown heliport. Noise has been of major concern and controversy in Pittsburgh for some hospital heliport approval processes. However, the nearest residential neighborhoods to the original location are all built on hills around the site. These people felt that they were too high up to be affected by the noise of helicopters flying along the Monongahela River, a natural access route. While the public opposition came from the residential neighborhood across the river, it was considered only moderate opposition because there was no emotional protesting. However, opposition is expected to reoccur if the heliport project is

reintroduced at the original site. The new site may not have this problem because it is located closer to downtown and further away from residences.

Safety has been another issue of concern in the Pittsburgh heliport site selection. In this instance it has been primarily an internal concern involving the fire safety standards to which the heliport design needs to conform. The Fire Department has required very stringent standards for the fueling facilities. These very conservative standards have increased the estimated costs of the proposed improvement, which makes it more difficult for the FAA to fund the heliport.

5.5 WASHINGTON, D.C. HELIPORT

5.5.1 Site Description

There is currently no public-use heliport in Washington, D.C. There have been several attempts at developing one and some have operated for limited periods of time. This puts Washington D.C. in the uncertain range of success. Although officials have generally not supported a heliport, the position against it is not as extreme or as organized as in San Francisco (see section 5.6). The difficulty is apparently due more to the structure of the city government, and city financial problems. In addition, although the community groups are well-organized, they appear to have concerns with higher priority issues.

5.5.2 Operational History

Washington, D.C. has a high level of civil and military helicopter activity. The area has a helicopter route chart, but no public-use heliports. The most recent attempt at heliport development involved a site located at the end of South Capitol Street in Southeast (SE) Washington, D.C. At the present time an oil company, Steuart Petroleum, owns the land on which there is an approved private-use heliport. This heliport was in operation for a short time on a prior-permission basis. Its history is an excellent illustration of the problems associated with heliport development in Washington, D.C.

5.5.3 Development History

Washington, D.C. is not amenable to heliports. There are a number of unused private-use heliports in the city. In some cases, no one knows who originally constructed them, or why. City officials have stated that "when trying to develop a heliport in Washington, D.C. a developer must start from less than zero." There is no statement in any zone in Washington, D.C. that either allows or prohibits heliports. This encourages developers because some attorneys feel that if something is not specifically prohibited in a zone, then it *can* be accomplished. However, the Planning Commission regulation and policies say just the opposite—unless an activity is specified as being permitted, then it is not permitted. Such an approach of having "permitted use" in a zone or site plan is a typical regulatory approach followed in many jurisdictions.

The heliport development process first requires the sponsor, usually with an attorney, to go to the Zoning Commission and work through one of two basic approaches. The first approach is to convince the Commission to change the text in the zoning code to allow a heliport to be built in the desired zone. Then, if successful, this change is referred to the Planning Commission and the Department of Public Works for their further review. The Planning Commission then evaluates the request. If there is a possibility of approving it, the Planning Commission then tries to work out the operational conditions. The second approach is to obtain a special exemption to zoning, rather than change the zoning text. However, if a special exemption is granted, the operational conditions must still be worked out with the Planning Commission.

5.5.3.1 Development Process

To circumvent the problems of developing a new site, heliport sponsors decided to use the existing abandoned private site owned by Steuart Petroleum located at the end of South Capitol Street. The site is located across the Potomac River from National Airport (DCA) along Helicopter Route 1. It was opened as a quasi public-use facility that allowed landing with prior permission only. The FAA-approved landing area is on a pier extended from the property. The property has been unused for years and is dilapidated.

The company originally planning to develop the Steuart Petroleum site was a large helicopter operator. They intended to make improvements before opening the facility and were trying to obtain financial support from the helicopter manufacturers to assist in the development. The helicopter manufacturers all have Washington, D.C. offices and it was believed they would use the heliport. But the operator was unable to secure support. At the same time, internal company concerns shifted the focus of the company away from heliport development.

The helicopter operator had an option with Steuart Petroleum that was allowed to lapse due to the inability to raise money. The operator also announced the heliport development in a helicopter association newsletter before talking with city officials, which annoyed city officials. Subsequently, a company from New York decided to get involved. They obtained a two tier lease, one tier during development and early operation, the second after full approval as a public-use heliport. They opened the heliport immediately on a prior permission basis because it was technically private-use, instead of improving it first. The heliport only had a private permit.

The new company arranged a meeting to present their ideas to city officials and political leaders in the community. They also presented the same data at the HAI Convention, at a meeting of the Mid-Atlantic Helicopter Association (MAHA), the local helicopter pilot/operator association, and at the local Advisory Neighborhood Council (ANC2D), which is the community organization for Ward 2 of Washington, D.C. where the heliport is located. Everyone's attitude at the ANC2D was considered "good to benign" except one person who was against the heliport.

The Washington, D.C. police were also interested in the heliport as a staging area so they would no longer have to use Hyde Field, an airport outside of the District. The economic development official for the District was told about the redevelopment benefits of the heliport and seemed

interested, but appeared to lose interest as soon as they left his office since there was no follow through. The heliport provided further economic support for the area by providing jobs for two local teenagers through the D.C. Summer Jobs Program.

The FAA Eastern Region has been trying to obtain a heliport in Washington, D.C. for a long time. The District of Columbia is provided with an aviation apportionment from the AIP fund like the 50 states that amounts to $200,000 year. Since there are no airports or public heliports in the District, there is no place to spend the money. The money is allowed to accumulate for 3 years then the most distant year's money drops off. In 1992, at the time the heliport effort was underway, there was $800,000 in the fund ($600,000 for 3 years, plus the $200,000 for the current year).

The FAA Airports District Office (ADO) in Falls Church met with the D.C. government Economic Development office and told them they could have the money if they would submit a plan. The first plan was rejected by the FAA because it did not follow the FAA guidelines. The next plan included a redevelopment plan for the whole area and not just for the heliport. The proposers were told that the FAA could not fund anything but the heliport with the AIP money. As a result, no further progress was accomplished.

Also in 1992, the most recent study "Helicopter System Inventory and Vertiport Feasibility Study for Metropolitan Washington," (reference 15) was completed by the Metropolitan Washington Council of Governments (COG) National Capital Region Transportation Planning Board. The COG, however, has no authority to build a heliport. That responsibility falls to the local communities.

During the vertiport study process, the South Capitol Street heliport was selected as a possible site. The idea then went to the D.C. Planning and Zoning Board who discussed this with the FAA. They wanted to start from scratch with forecasts, demand studies, etc. The FAA said no, that those efforts had already been completed. The FAA again went over what kind of development was eligible and the city was again not interested. Because of its financial situation, it is unlikely that the city would have been able to provide the 10 percent matching funds estimated at $20,000 to $80,000. Every year the FAA writes a letter to the city apprising them of the available state apportionment, and every year the city writes back and says they're not interested.

After all this activity, a new mayor was elected in 1990. This meant that there were new people in official positions. The result was that the heliport proposers had to start all over in obtaining support from the local government. The new set of government officials were introduced to the FAA, but again nothing developed as a result. There was no way of telling where all the pitfalls were. In the meantime, the person who was against the heliport project called the building inspector questioning the heliport's occupancy permit. This D.C. government inspected the site to the standards of an office building. They then tried to get an occupancy permit as a public-use heliport but were unable to do so. The developers secured the services of a new attorney who

had been successful on a project in Northwest Washington, D.C. He tried the *since a heliport is not forbidden, it should be able to get a special use permit* approach—that did not work. The proposers then offered to design a heliport that would "fit-in" and add to the economy. Not only would it have added to the D.C. Summer Jobs Program, but the proposers offered to provide a water-taxi service to National Airport (DCA) just across the river. The heliport would provide a tax base, albeit small, provide some jobs, and a sightseeing ride to encourage tourists to spend money in the area. Although they never asked or expected the city to spend any money, unlike Portland, Oregon (section 5.2.3.1), this approach was not enough. The New York proposers still have an option on the location.

5.5.3.2 Lessons Learned

The vagaries of District politics is a basic problem for a Washington, D.C. heliport. While individuals in the government may want a heliport, no city office wants to officially back one. One of the proposers believes that one major reason the heliport failed was that it lacked a champion in the city government. This may be due to the fact that since there is no aviation facility in the District, there is no designation for which department would handle a project such as a heliport.

5.5.3.3 Issues and Concerns Addressed

The only reason stated by officials in the District of Columbia regarding why the city does not want heliports is noise. However, at the South Capitol Street site, it does not appear that noise would be a problem. First, at the present time, it is an industrial area. The residential neighborhoods could easily be avoided by river access along both the Potomac and Anacostia Rivers. The Potomac Gas and Electric (PGE) generators located next to the site make so much noise that it masks the helicopters and they would add no new noise. In addition, there is already a high level of helicopter traffic through and around this section of the city. For the most part these helicopters use the established routes away from noise sensitive areas.

Another reason for the problems with South Capitol Street may be a *competing agenda.* There is a waterfront redevelopment project in the same area called "Buzzard's Point 21." This project would provide offices, apartments, houses, and a river walk along the Anacostia River. This may also explain the lack of interest in a heliport at that location by city officials.

5.6 SAN FRANCISCO, CALIFORNIA

The City of San Francisco does not have a public-use heliport and is not likely to have one in the foreseeable future due to organized opposition by neighborhood associations. This section will concentrate on the likely reasons for, and consequences of, this situation.

5.6.1 Site Description

San Francisco must be considered the epitome of effective opposition regarding heliport development. Helicopters and heliports have become particularly controversial and emotionally charged issues. It has been stated that many residents do not even want to see helicopters flying. The city has not yet approved even a hospital heliport (although it has not ruled out that possibility). Furthermore, this attitude was maintained even after helicopters provided emergency aid during the 1989 Loma Prieta earthquake. This viewpoint stems from many factors: activity by past helicopter operators; the mild Mediterranean climate that encourages outdoor activity; and the city's topography that provides world-renown views, but also reflects noise more readily than other urban areas. San Francisco provides an excellent example of the role of public involvement in the heliport approval process and the effectiveness of opponents in using that process to accomplish their goals.

5.6.2 Operational History

The history of the study "Phase I, Technical Report, San Francisco Vertiport Feasibility Study" (reference 16) provides an excellent example of the impact of local concerns on the decision-making process regarding heliports, as well as the interaction of numerous interests and participants in that process. To that end, it is important to highlight several key issues that were unique to San Francisco during the undertaking of the study and its eventual outcome.

There was extensive experience with helicopters and landing sites in the City of San Francisco years before the study (reference 16) was initiated. A tour and sightseeing operation operated from Pier 43 near Fisherman's Wharf for 10 years, starting with one, and then adding a second, Bell 206 (Jet Ranger). The Pier 43 operation created noise problems for the residents on both Russian and Telegraph Hill, primarily because these hills look down onto Fisherman's Wharf. The noise was reported as intolerable by the residents when the two Bell 206s flew almost continuously from 8 a.m. until sunset, 7 days a week. The neighbors were also very concerned about invasion of their privacy from sightseers overflying their property.

In addition, EMS operators landed at Crissy Field in the Presidio, as well as on Pier 30-32 near the Bay Bridge, on a prior-permission basis. The U.S. Navy (based at Alameda Naval Air Station) and other military units also operated helicopters in the vicinity of San Francisco. In addition, a heliport in China Basin accommodated commuter operations during the early 1980s. The result was that the residents had established positions for and against helicopters and heliports in the city long before the study was conducted in 1989.

Public concern about helicopter activity over and in the vicinity of San Francisco had been galvanized by the sightseeing operation off Pier 43. In addition, the neighborhood associations had extensive experience cooperating with each other on other city-wide issues such as the relocation of Candlestick Park and the demolition of the elevated Embarcadero Freeway. The associations have established a record of successful coalitions to affect policy and development decisions in the City.

The mild climate in the region encourages outdoor activity on a year-round basis. In addition, the topography provides scenic vistas of San Francisco Bay, as well as a direct line-of-sight of almost all maritime and aviation activity on or over the Bay. Consequently, residents throughout the city are able to observe first-hand all the activity in the vicinity of the Bay. In addition, noise generated by boats and aircraft is propagated and echoed by the hills on which the city is built.

Although the study is referred to as a "vertiport" feasibility study, the city's primary focus (and therefore the study's as well) was on conventional helicopters and heliports, not the CTR. The study's title was the result of FAA's interest in broadening the scope of heliport plans across the country to include CTRs and vertiports, even though many studies focused on helicopters and heliports (reference 17).

5.6.3 Development History

In the mid-1980s the Port's planning department was feeling the pressure from both the heliport proponents and the anti-heliport neighborhood groups. It was believed that a heliport study would be the proper vehicle to decide "once-and-for-all" whether or not San Francisco should build a heliport. In January 1989, shortly before the study (reference 16) began, the Port of San Francisco wrote a letter that set the tone for the study and also provided the background for performing it. The letter stated in part:

> *...For the past several years, San Francisco has struggled with the question of whether to develop a heliport in the city. On the one hand, many of the city's hospitals, emergency services, media, businesses, and entertainment groups have promoted the development of a heliport. At the same time, community groups and neighborhood associations have been concerned about the noise and safety problems associated with heliports and (except for medical emergency purpose) have resisted the idea. The issue periodically re-emerges, indicating that it has never been adequately resolved.*
>
> *In November, 1986, the Mayor of San Francisco appointed a Citizens committee to review the issue in depth, and to recommend a course of action. First and foremost, the committee agreed that medical emergency services requiring a helicopter facility should be seriously considered and accommodated. Furthermore, the committee recommended (by a vote of 8-5) that a study be done to objectively research the need for a commercial heliport, and given whatever need is determined to exist, the study will identify potential sites for a heliport (aka, 'vertiport'), and assess the environmental and social impacts of a potential vertiport in those sites.*
>
> *In August, 1987, the San Francisco Port Commission and Board of Supervisors authorized a grant application be made to the Federal Aviation Administration (FAA) for the purposes of undertaking such a study. The FAA ultimately*

approved the grant application, and has made funds available to the Port of San Francisco to sponsor this study.

The FAA and the Port of San Francisco agreed that the Port should act as sponsor of the study even though they had no prior experience in aviation planning studies. Many of the past helicopter landing sites and potential sites for a future public-use heliport were on Port-owned property along the waterfront of San Francisco Bay. Thus the Port was expected to be the agency responsible for constructing a public-use heliport if the decision to build it were made.

The Citizen's Advisory Committee (CAC) formed for the study by the Port was technically an ad-hoc committee, and membership was open to any volunteers. Based on input from the Port and the CAC, the study was divided into four phases, with three go, no-go points. The first phase was a *needs assessment* that analyzed the actual use of helicopters in the Bay Area and quantified the benefits of a public-use heliport with respect to the potential users of the facility. The major participants in the study, most of whom were involved in the CAC formed by the Mayor, included the:

- Port of San Francisco (study sponsor);
- Neighborhood and Citizens Associations;
- San Francisco Chamber of Commerce;
- Helicopter Operators: commercial, corporate, public service;
- City of San Francisco Planning Department;
- City of San Francisco Aviation Department;
- City of San Francisco Office of Emergency Services;
- California Department of Transportation Division of Aeronautics, (CALTRANS);
- FAA;
- National Aeronautics and Space Administration (NASA) Ames Research Center; and
- City Hospitals.

The study was terminated at the end of Phase I. Subsequent phases of the study were to have been: a heliport master plan, site selection, and an environmental assessment. However, the Port commissioner decided there was insufficient need identified for a public-use heliport, and consequently a decision was made not to proceed beyond Phase I (reference 16).

5.6.3.1 Development Process

The CAC, formed by the Port as an outgrowth of a previous citizen's committee, had a total of 39 members. The CAC provided input to the study's consultants, as well as representing their individual constituency or group. The people who participated did provide a good cross-section of the different positions on the heliport issue.

As sponsor and manager of the study, and the potential owner of the heliport sites, the Port was considered one of the most important agencies involved in the study. The general consensus among the Port Commissioners and staff was that the study did accomplish its primary goal,

namely, to resolve the issue of whether there was sufficient need for a public-use heliport in San Francisco. They also believed that the study process was inclusive, and that all interested parties had ample opportunities to provide input.

The proposers of the heliport included not only helicopter operators but also large companies, such as the Bank of America, as well as the Chamber of Commerce. The study, in fact, identified strong demand for a public-use heliport in San Francisco, however, the users of helicopters represented a relatively small percentage of all business travelers in the city. There was also the sense that the use of Port-owned property for a public-use heliport would provide benefits for the few that could afford helicopters, while the majority of people would still have to drive or use public transportation. The Port staff felt that some of the heliport proposers were, in some cases, too focused on their own issues and that undermined their credibility. Perhaps this was an example of the proposers being unable or unwilling to listen, understand and care about the concerns of the other affected interests identified, as discussed in section 2.3.3.5. The study also coincided with the period when the Port re-examined their goals for the waterfront, and decided to explore commercial non-maritime development such as hotels, restaurants, etc. That was a very controversial decision. It was further decided that a heliport was not consistent with this type of development. In essence, heliport development was seen as being detrimental to a large, more important public objective.

Furthermore, it is interesting to note that many large corporations had moved their headquarters out of San Francisco in response to the perceived lack of support for business in the City, as well as lower labor costs elsewhere. Neighborhood and citizen associations had clearly stated that their priorities included maintaining their quality of life and the unique characteristics of San Francisco, which they felt were severely threatened by unconstrained growth. Therefore, the heliport issue is actually part of a much larger predicament, namely, the conflict between economic growth and development and the preservation of the residential character and outdoor lifestyle enjoyed by many of its citizens. Finally, as evidenced by the outcome of the vertiport study and other major projects that were abandoned, neighborhood associations are extremely effective in promoting their agenda and working within the political system to achieve their goals.

The 1989 Loma Prieta Earthquake struck while the study was being undertaken. Since part of the study investigated the use of heliports by public service agencies, it was assumed by the consultants and the Port staff that the earthquake would generate support for a heliport for at least disaster relief purposes. However, the opposite occurred. There was a consensus among neighborhood organizations that in the event of an emergency such as an earthquake, helicopter operators (both military and civilian) will land wherever they need to regardless of whether there is a heliport or not. This was reinforced by the video of a Coast Guard HH-3 landing on the Bay Bridge to rescue trapped motorists. In fact, many committee members felt that a large public-use heliport would not survive a major earthquake.

While the study was being conducted, the Port staff examined the viability of CTR service to San Francisco to get a sense if that was a feasible alternative, based in part on the vertiport work

being done by NASA and the Southern California Association of Governments (SCAG). The Port concluded that CTRs were too expensive to achieve commercial success and therefore there was no need to consider development of a vertiport in San Francisco.

Noise was the single largest concern regarding a public-use heliport. Noise issues had galvanized strong neighborhood opposition to helicopters due to the experience with the sightseeing helicopters on Pier 43. It was noted that noise reflected off the hills, and that higher priced property was located on and near the top of the hills, and those residents were often the most vocal in their opposition. The acoustics of the city are such that in the middle of a weekday afternoon from the base of Coit tower on the top of Telegraph Hill the sound of the ferry crossing the Bay to Sausalito is clearly audible. Another interesting aspect of the sightseeing operation was that many residents believed that the 10-year lease the helicopter operator had obtained from the Port to operate from Pier 43 was obtained without proper review and public hearings. This added to their prejudice against helicopter operators. It is also an example of the importance of following due process and how even the perception of not doing so can adversely affect a proposed project.

During the study, the Port initiated consideration of non-maritime development on the piers such as hotels. A number of proposals were submitted to the Port for commercial development projects on the piers. Subsequently, "Proposition H" was passed prohibiting development of hotels and floating prisons by the Port. The Port is presently preparing the "Waterfront Master Plan," which was scheduled to be finished in 1995. Only maritime-related development will be allowed on the piers until the plan is completed.

Since the vertiport study was concluded at the end of Phase I, there have not been any requests to revisit the issue. As far as the Port is concerned it is a closed subject. Their present focus is on the Waterfront Master Plan. The Port staff says that the Commissioner's decision not to proceed beyond Phase 1 was based on the results of the study and not (emphasis added) on any political pressure from special interest groups.

The one possible exception may be hospital heliports. Hospital heliports were also considered in the study and recommendations made that a number of hospitals should have a heliport. The Port believes that the issue may need to be re-examined. The study recommended that a number of hospitals that provide emergency services should have a helipad to serve trauma and emergency patients. However, these hospitals are not located on Port property and the Port has no jurisdiction over those facilities. This is another example of the need to have the group who has it in their mission to be responsible (to provide access to emergency medical services), to act on that responsibility, and to work towards a proposal and solution that carry out those responsibilities. Many hospitals, in fact, are located in residential neighborhoods. The hospital administrations are concerned about noise from helicopters and have not yet acted to initiate appropriate proposals.

The San Francisco City Planning Department did not support the heliport, and in fact there is still a policy statement in the city's master plan in the Embarcadero Corridor element, that states:

"Prohibit heliports or STOLports." Once it is closed by the Army, the City's plans for the Presidio, which includes Crissy Field, is to turn it into a national park run by the U.S. Park Service.

5.6.3.2 Lessons Learned

Based on the perspectives of the people involved in the study, a review of the documentation compiled by the technical report, and an examination of the outcome of the planning process, a number of observations and conclusions can be drawn.

The general consensus, even among helicopter operators who did not agree with the outcome, was that Phase 1 of the vertiport study (reference 16) accomplished its primary goal, namely to present data and document whether or not there was a need for a public-use heliport. In addition, since the study was completed, the issue has not re-surfaced with any of the government agencies involved.

Helicopter operators that were involved in the study have no interest in pursuing the idea again. They feel that they invested more than enough of their own time and money with no results to show for it, and the situation in the city has not changed since the study was completed. In essence this interest group has consented to the outcome and decisions of the study. As noted previously however, there appears to be some private interest in re-visiting the issue, but no specific party was identified and none of the people contacted knew who was involved.

To quote the former Speaker of the U.S. House of Representatives, Thomas 'Tip' O'Neil, "all politics is local." The heliport issue in San Francisco is a classic example of that statement. The long history of the sightseeing helicopter operation on Pier 43 had so galvanized opposition to helicopters by the time that the vertiport study started in 1989, that any chance to ultimately build a public-use heliport had been significantly reduced or eliminated.

The best opportunity to have created an environment to allow the development of a public-use heliport is San Francisco would have been before the sightseeing operations on Pier 43. That operation created deep opposition to helicopters in general because the neighborhood associations felt that they had no control over its activity even though it created significant noise problems and invaded their privacy. The unique topography and climate of the bay area also contributed to the sense of frustration because of the year-round outdoor life-style of the residents. The residents also felt during this period that agencies such as the FAA had no interest in responding to their concerns, and consequently had little credibility with their organizations.

During the study, the Port considered the possibility of allowing non-maritime development, like hotels, on the piers. The idea of hotels on the piers generated significant opposition from many of the same associations that were opposed to the heliport. There are indications that the Port Commission wished to limit the number of controversial projects it undertook, and that it would not support the heliport unless there was near unanimous support from the CAC, including the neighborhood associations. The study, obviously, did not generate unanimous support or

consensus for the proposal among committee members. Therefore, the Commission voted to terminate the study at the end of Phase 1 and return the balance of the grant to the FAA. Perhaps this setting of an extremely difficult criteria objective by the decision makers of "near unanimous support" was an impossible objective to achieve. However, all of the interested parties have appeared so far to have consented to the decision to not proceed with the study and have not pressed to change the study conclusions.

None of the participants, including the government agencies, were surprised by the outcome of the study, which tends to indicate that the outcome was anticipated. Given the events leading up to the study and the opposition from neighborhood associations, was it appropriate for the FAA to issue a grant and the Port to sponsor the study? In general, the feeling is that it was appropriate in this particular case because all of the parties involved agreed at the outset that the Phase 1 study had to address the issue of need and hopefully resolve the question. From the Port's perspective, that objective was accomplished.

Almost everyone contacted agreed that the issue will probably re-appear again sometime in the future, although most people feel that it will not be seriously considered by the city or the FAA again for some time to come. The underlying opposition to the heliport is still very strong, and the city has not changed its position that there will need to be significant support for the project (including from City Hall) before they would consider it again. The Port will not even entertain the idea until after the Waterfront Master Plan is completed, and even then it is unlikely that their agenda will include a heliport.

5.6.3.3 Issues and Concerns Addressed

Helicopter Operators. Helicopter operators located throughout the Bay Area from San José to Oakland to Sacramento, have argued for years for a public-use heliport for San Francisco. The helicopter community viewed the public-use heliport in San Francisco as a hub for their activity, and were confident that such a facility could significantly increase their business. The operators felt very frustrated that they were unable to convince the city to support the idea. They did feel that the study was thorough and presented their case adequately and that the need for a heliport had been established. They felt that the Port's decision not to proceed with the study was based on political, not technical, considerations. However, from the Port Commissioner's perspective, they were achieving a larger mission that is part of their responsibility, and they were acting in a "technical" and not political way.

In hindsight, the operators believe that there really had been almost no chance to build a heliport in the city, and that the outcome of the study would have been the same regardless of how it was conducted. Several operators made similar comments, namely, that they had invested a tremendous amount of money (many thousands of dollars) and time (years) into the heliport issue, going back before the study was started, and felt that it was a wasted effort. They have no plans or interest in rejuvenating the process again, and feel that politically there is still no chance that a heliport will ever be built in the city in the foreseeable future. This shows that this interest group has consented to the outcome of the study.

The operators did try working with neighborhood associations and some of the more vocal opponents to show them how helicopters are flown; however, they realized that they could not overcome the opposition generated by the sightseeing operations on Pier 43. The operators felt that there was also a very strong anti-business as well as anti-helicopter bias among the residents in San Francisco, which is why companies such as Bank of America, Chevron, as well as the Chamber of Commerce, who were all on the advisory committee, could not change the outcome of the study. One operator did allude to the rumored "deal" made by the sightseeing operation to lease Pier 43 and believed that this rumor had further alienated many people in the city.

Neighborhood Associations. There are 53 neighborhood associations in San Francisco. These associations represent tenants and landlords, depending on their membership. Their primary goal is to maintain and improve the quality of life and the integrity of the neighborhoods. One member of the Russian Hill Neighbor Association was very actively involved in the vertiport study. The associations are very politically active and often work together on development issues such as the heliport, the proposed relocation of Candlestick Park into the city (which they oppose), and the demolition of the elevated Embarcadero Freeway (which they supported and won).

The associations believe that the study did not prove there was a sufficient need for a public-use heliport. Rather, they were convinced that a heliport would be a convenience for a relatively small number of users as opposed to an essential business tool, and that businesses had transportation options other than helicopters. This is an example of the proposer not having made the case to the other affected interests that the proposal is addressing an important problem, the importance of which is identified in section 2.3.3.1. However, they indicated there would be some interest in revisiting the issue of emergency helipads at specific hospitals in the city, which would not be pursued by the Port.

Furthermore, during the 10 years that the sightseeing helicopters operated from Pier 43, opposition to helicopters had become very deep-seated and emotional. The neighborhood associations noted that the sightseeing operation had very effectively galvanized their opposition to helicopters, and without the tour operation their opposition would have been much less organized and less intense. When the vertiport study started, the Russian and Telegraph Hill neighbors told other neighborhood associations such as Potrero Hill that if a public-use heliport were built south of the Bay Bridge on Pier 30-32 for example, they would experience as much impact as Russian Hill had.

The neighborhoods would not have tolerated any more sightseeing operations from a heliport in the city, and realized that if a heliport were built with FAA funding it would have been very difficult to prevent the sightseeing business from starting up again. The neighborhoods also believed in general, that the FAA was unresponsive, really did not care about their opinions, and only wanted to build a heliport in the city. The associations, on the other hand, had confidence in, and respect for, both the present and previous planning managers for the Port of San Francisco.

Even without the heliport, there are still tour helicopters, and others, that continue to fly over the city on a daily basis from bases in Oakland and Sausalito, but not nearly as often as the one based in the city. The neighborhoods were convinced that the helicopter operators were right about one thing, that a public-use heliport would in fact generate a significant amount of traffic. The neighborhoods, however, did not object as much to military helicopters over the bay because they rarely flew over the city. If the issue is raised again, they will take the same position they did during the study. The same coalition of neighborhood associations are also actively opposed to the proposed hotel development on the piers.

Federal and State Aviation Agencies. NASA, FAA, and CALTRANS were members of the advisory committee. One of their common missions as government agencies is to promote the use of aviation through grants and technical support. NASA was represented by Ames Research Center located at Moffett Field, which has been actively involved in the development of CTR aircraft. They believe that the study provided documentation supporting the business community and helicopter operator's contention that there is a need for a public-use heliport, and that such a facility would serve both a regional, as well as a local, transportation need.

The consensus of state and Federal agency personnel was that opposition by the neighborhood associations was too strong to overcome during the study, and that the business community and operators did not have the same level of political influence as the associations. The agencies acknowledge that the decision regarding whether or not to build a heliport rested solely with the city, and that the Port's decision not to proceed with the study was well within their prerogative. This is also an example of this group consenting to the outcome of the study. They may also be reviewed as the state and Federal agencies agreeing that the need for community preservation is more important than achieving one aspect of their responsibilities. Perhaps, if these persons truly feel that documentation of need was sufficient, then other options and alternatives to address those needs should still be pursued in the future.

The state and Federal agency personnel believe that the Port managed the study effectively and that the Advisory Committee had very broad representation. The FAA has indicated that they had not heard of any interest to resurrect the issue of a heliport in San Francisco since the study was completed, and had not heard of any private parties trying to pursue the matter. The FAA has not programmed money for any future heliport studies.

5.7 SIGNIFICANT ELEMENTS IN SUCCESS OR FAILURE

This section evaluates how the guidance provided in sections 2.0 and 3.0 correlates to the success or failure of the approval processes described in the six case studies. It evaluates whether or not the sponsors of the six heliports applied the basic elements of successful public involvement (section 2.3.3) and what affect this had on the outcome of the approval process.

5.7.1 Dallas Application

The Dallas Vertiport is considered a success because it is expected to remain in operation and to expand as the convention center on which it is located grows. The impetus for the heliport came from within the local government itself and was not sponsored by a private individual or group. The proposing agency, the city's Aviation Department, was acting clearly within its public mission and responsibilities. It is somewhat difficult to apply the basic rules of public involvement in this case because the development effort was not publicly controversial or confrontational. The implementation process appears to have been a slow evolution with few people knowing about it even within the system. The only remarkable issue was obtaining lump sum funding.

The vertiport implementation was presented as an important problem to the Department of Aviation and to the economic development interests of downtown Dallas. It was taken seriously by those who promoted and supported it within the local government system. The agency ultimately responsible for vertiport construction handled the implementation process and used reasonable processes and approaches. Each time the proposers encountered a roadblock, a reasonable alternative was found. That is also an illustration of the sponsor dealing with each and every potentially affected interest in a way that heard and understood their concerns, and when appropriate and/or necessary found options that addressed these concerns while still achieving an acceptable solution to the basic problem or objective. No occasion for public understanding and caring was required because each group appeared to be dealt with individually and privately.

The heliport site selection was not a publicly controversial issue because the sponsors took effective actions such as those described in section 3.0. The supporters were especially effective in identifying the real authority of the community by the fact they were able to garner power to obtain the Federal AIP funding in a lump sum as required. They were also good in not letting anyone of the many concerns raised by different affected interests become a roadblock to their main objective of implementing a vertiport.

5.7.2 Portland Application

The Portland heliport is considered a success since it was built and is expected to remain in operation. Like Dallas, Portland took a long time to implement, but unlike Dallas the public was very directly involved in the development process. Because there was public involvement and the development was at times controversial, it is an excellent example of proper use of the four elements of building informed consent.

The Northwest Rotorcraft Association (NWRA) considered the construction of a heliport an important problem. They felt it was justified for their purposes, and would be beneficial to the community. They raised the money themselves and effectively conveyed the benefits of the heliport to the community, found a location where the land use would be compatible, stressed the multi-modal and multi-use aspects of the site. In this manner they showed that it would be a

logical extension of the parking garage demonstrating a concern for the broader public interests of the community.

The willingness to invest their own money helped to convince other interests that the sponsors truly saw this as an important concern. They understood the agencies responsible for construction and worked with them. The NWRA even offered the Port of Portland a role in the operation of the site as that function is part of their agency mission. The Port did not want to run it, but this effectively secured their support.

The NWRA used reasonable processes in many instances. They started with a heliport study, then were willing to modify the study process to improve the compatibility of the site. Their willingness to help pay for the additional floor of the parking garage, funding the local share of the project themselves and not asking the city to do it, showed a reasonable process and approach.

Critical to the project was NWRA's "understanding and caring" with public issues. They understood the environmental concerns and worked *with* the concerned groups to find an appropriate site. Their work with the environmental group established credibility. Those involved recognized that the site selected would improve noise mitigation, thereby achieving informed consent and averting a law suit. The Portland case history also highlights NWRA's use of effective action. They took complete responsibility for their heliport, not only financially, but, more importantly for the community.

Above all, the NWRA sponsors were honest. They did not try to convince anyone that the original site from the first study was really compatible with a heliport. They recognized that the potential noise problems were legitimate. This alone went a long way in establishing their credibility. They used positive public relations and built support.

The NWRA made sure that the local government knew what was going on before announcing any plans. They established detailed benefits of the heliport to the community. They were aware of a competing proposal of the riverfront greenway and did not try to fight it. Many of the individuals were active in the community. So much so, that when the need for money arose, the bank was willing to approve a personal loan without question, knowing that the individual would repay the loan. Furthermore, they took the financial responsibility for the heliport away from the local politicians who otherwise would have had to raise taxes to support this relatively narrow private interest. They also accepted the responsibility of operating the heliport. As noted above, the process of understanding and addressing the concerns of the elected decision makers secured city cooperation in giving permission to site the heliport facility. The NWRA did a lot of little things right.

5.7.3 Miami Application

The Miami Skyport must be considered a limited success. It is in operation but the heliport activity level is low. The implementation process presented no problems because it was built by

Dade County Aviation Department at an existing airport, Miami International, and therefore did not undergo a public review process. It does demonstrate the ability of a local government agency to complete such a project once the decision has been made.

The Miami application does raise some significant questions. One question would be, could it have been completed as easily if it had been proposed for an off-airport location? A second question could be, did the lack of a need for a "critical review" partially result in a plan being implemented that was not as effective as it could be? Perhaps the "landing restrictions" would have been less stringent and the heliport would be used more if there had been an open public decision-making process. However, efforts to built private heliports in the Miami Metropolitan area have run up against public opposition with regard to noise and the community's ability to influence operational characteristics of a facility once completed.

5.7.4 Pittsburgh Application

The Pittsburgh heliport is considered a *likely* success because the possibility is great that it will be constructed. Like Dallas, the impetus for the heliport came from within the government and not from private interests. And, like Dallas, it is difficult to apply the element of public involvement because to date there has been limited public involvement in the heliport development. The major roadblocks have been all circumstances of government processes, an unaggressive city administration, and a classification of heliport incompatible with immediate FAA AIP funding availability.

The agency responsible for the heliport development, the City of Pittsburgh addressed many problems. They used reasonable processes and approaches by implementing a series of studies, obtaining environmental approval, and applying for the FAA AIP funds. A reasonable approach is also consistent with locating a potentially preferable location for the heliport. Perhaps ironically, the delay may be better in the long-term for serving the future market demands. The sponsor demonstrated the use of understanding and caring of public concerns by staying out of the Golden Triangle and not getting in the way of potential higher value economic development.

The heliport sponsors were aware of a *private* agenda, that the city administration did not wish to pursue potentially controversial projects. While they built general support with the SPRPC, the state, and with the FAA Eastern Region, they have not yet obtained the specific consent to participate in funding the project as had been proposed. Perhaps, when it becomes time to develop the site or the alternative site it may become more of a public issue. However, in the meantime, if the City wants to implement their proposal, they need to find effective ways to understand and address the concerns of the other public agencies who have effectively placed their proposal on hold.

5.7.5 Washington, D.C. Application

At the present time, it is unlikely that an effort to build a heliport in Washington, D.C. would be successful. In the future, it may become possible to implement a heliport. The economic

outlook of the city may brighten, there is a relatively high level of helicopter activity, and there always seem to be hopeful sponsors who keep trying.

In attempting to implement the South Capitol Street Heliport many little things were done right. Both sponsors were willing to start small and expand when it became feasible. The second sponsor presented their project to city officials and the local Advisory Neighborhood Council (ANC2D) first, and then to the local helicopter organizations, thereby using reasonable processes and approaches. They took the project seriously and defined the benefits to the community, even providing jobs for the District's jobs program.

The sponsors also built support for their presentations and established some general support with the city police aviation department. However, establishing a broader public interest, such as co-locating the police aviation facility may have helped to give the proposal greater importance. The major roadblock appears to be the local government structure not having a unit whose mission was consistent with the proposal.

It is difficult for sponsors to determine the appropriate center of responsibility in the local government that would be responsible for implementing a heliport. This may be due to the fact that there are no aviation facilities in the District of Columbia. Consequently, it has not been determined which agency in the District Government would handle it. Each official the sponsors talked to was initially interested but then lost interest for unknown reasons. This is likely a case of private agendas, as well as the realization of the potential disadvantages of each group's particular office taking the responsibility for a heliport when that has not been part of its mission.

The city agencies did not see the heliport as a serious project. No serious effort was made by the city to support its implementation. This may be why the city agencies did not follow reasonable procedures or approaches. They looked into the situation to see if it would fit in to their own agendas. They may have been hoping to receive full funding for an entire redevelopment project, not for just the heliport.

When it became obvious that the funds would not cover everything, the city agencies lost interest. To be realistic, the fact that the city had no interest in providing the 10 percent matching funds could be due to the high demand for funds currently facing the District for many other very pressing urban problems, such as crime prevention or education. Backing a heliport may seem frivolous in the present atmosphere, even with the benefits it would provide.

5.7.6 San Francisco Application

The elements of public involvement work very well in San Francisco, however they are applied by the neighborhood associations and the focus is against heliports. A coalition of neighborhood associations are actively opposed to anything that would impact their concept of good quality of life in the city. The neighborhood associations are well-established fixtures in the political landscape of San Francisco.

Their effectiveness in proactively promoting their issues and positions were very evident both during and after the heliport study. First, in defeating the ballot issue to relocate Candlestick Park to downtown, even though it had the support of the Mayor, the Chamber of Commerce, and the owner of the San Francisco Giants, who threatened to move the team if the stadium were not relocated. Second, in having the elevated Embarcadero Freeway torn down because it obstructed the view of San Francisco Bay, even though CALTRANS (its owner) had decided it was more cost-effective to repair it than replace it after the 1989 earthquake. In essence, the neighborhood citizen groups appeared to have effectively used the principles of informed consent "to implement" the proposals they were championing—neighborhood preservation and livable communities. The heliport sponsors and city agencies have consented to the neighborhood proposals and viewpoints and are not pursuing the heliport location.

Sentiment is so against heliports that most of the support that heliport sponsors established came from elements removed from residential life, such as big corporations and agencies like Bank of America, Chevron, NASA, the FAA, and CALTRANS. Even local associations like the business oriented Chamber of Commerce had little impact. Other local government bodies such as the City Planning Department did not support heliport development. Past public relations mistakes made by the traditional heliport sponsors, like the sightseeing operations in San Francisco, and the appearance of being self-serving were not forgotten. They provided a focal point to rally the neighborhood organizations. In addition, those associated with the neighborhood organizations believe helicopter use only benefits an elite minority. This myriad of private agendas and conflicting planning agendas worked against heliport development.

6.0 CONCLUSIONS AND RECOMMENDATIONS

This section presents conclusions and recommendations based on the research presented on the nature of public decision making during the implementation process (section 2.0), data acquired through participation in the "FAA Heliport/Vertiport Approval/Denial Workshop," conducted by Scientific Applications International Corporation (SAIC) at the 1994 Helicopter Association International (HAI) convention (section 3.0), and data collected in six case studies of actual heliport approval processes (section 4.0).

6.1 CONCLUSIONS

6.1.1 SDIC and Workshop Results

It is striking to note how closely the SDIC approach (section 2.0) and the Workshop results (section 3.0) are aligned. The implementation procedures derived from the workshop clearly demonstrate that those who have been involved with the everyday aspects of heliport implementation exhibit an understanding of SDIC principles even if it is not defined as such. The four basic elements are evident in their recommendations: addressing an important problem, responsible agency to address the problem, using a reasonable process and approach, and understanding and caring.

The comprehension that a "tiny minority of people who perceive that their interests will be seriously damaged by the proposed project can stop that project" (section 2.3.3) is well known to persons experienced with heliport development. The techniques presented in section 3.0 stress honesty with the public, facing the real problems, and developing ways to mitigate them. The successful examples seem to have done that. The need to use a responsible approach and procedure is evident in emphasizing the need to talk to city planners and others to find out what is going on within the area before developing or proposing a heliport project. These methods recommend identifying the agency or individual with the real authority to approve the project. This corresponds to having the responsible agency address the problem. The methods exhibit understanding and caring by acknowledging environmental and other issues presented by the public and by dealing with these issues head-on.

Section 3.2 of this report discussed the traditional approaches to addressing public concerns and issues (see list in table 2). Table 4 categorizes these approaches under the four basic SDIC elements of public involvement work.

There are, however, two comments that can be made. First, is that the SDIC definition of "addressing an important problem" has not been identified. *It means that there is an important problem in the community that can be solved by implementing a heliport.* In the traditional approach an "important problem" has been implied with "benefits to the community" and "finding business support," but these issues have not been approached as an *important problem* that the heliport can solve. The important problem does not have to be a large one such as solving all the community's transportation problems, but it does need to be important to the

TABLE 4 EFFECTIVE ACTIONS CATEGORIZED BY SDIC ELEMENTS

BASIC ELEMENTS OF PUBLIC INVOLVEMENT WORK			
ADDRESSING AN IMPORTANT PROBLEM	PROBLEM ADDRESSED BY AGENCY RESPONSIBLE	REASONABLE PROCESS AND APPROACH	UNDERSTANDING AND CARING
Be an Active Member of the Community Be Aware of *AGENDAS* (hidden, private, and competing) Define Detailed Benefits to the Community	Identify *REAL* Authority Center in Community Build Support—Find Champion in Business Community and/or Local Government	Think and Act Long Term, It Is a Long Slow Process Educate—at Every Opportunity, *NOT* Just When a Heliport is in Question Apply *POSITIVE* Public Relations Start Small, Build Confidence, Then Expand, *IF* Feasible Establish Local Approval Concurrently With State & Federal Make Sure Local Government Knows Before Announcing Plans Give Media a Positive Story (after local officials know) Take Responsibility Off Local Politicians	Be Honest—Address Issues Be Ready to Compromise—The Secret to Successful Negotiation

Source: SAIC, 1994.

proposers. A good example is Portland's important problem—that one heliport was closing and they needed a replacement. Albeit small in the grand scheme of things, *it was an important problem to the NWRA, and it could be solved by building a heliport* (see section 6.1.2).

The second comment, based on the SDIC approach, is that the techniques presented in section 3.0 are still primarily directed toward trying to achieve *positive support* or *consensus* from everyone in the community who may be affected by a heliport. It needs to be understood that obtaining consensus is most likely not possible and may not be necessary, if *lack of opposition* from most opponents, or Informed Consent can be obtained.

6.1.2 Application of SDIC Public Involvement Work to Case Studies

The case studies exhibit two types of proposers, local government agencies in the cases of Dallas, Miami, Pittsburgh, and San Francisco, and private interest groups in Portland and Washington, D.C. Table 5 presents the four basic elements of public involvement (section 2.3.3) and gauges the degree of application in the six case studies and the result of the approval process for the those locations. The level of *success* for the purpose of this study is determined simply by whether the facility was constructed, or is likely to be constructed, and if it can be expected to remain in operation for the foreseeable future. Since the basic elements of public involvement were originally developed for public agencies evaluation, it is appropriate to evaluate both agency-sponsored and private-sponsored facilities.

It appears that there is a strong correspondence with the degree of success in implementing the proposed heliport for those areas which showed the presence of each of the four public involvement elements of obtaining Informed Consent. When one or more of those elements were missing, the implementation of the proposal was not successful.

With regard to *addressing an important problem*, Miami did not have to apply this due to the lack of any opposition. Perhaps if they had needed to go through a "critical" review process, then the consequence of limiting their demand with restrictions could have been worked out before the heliport was constructed. As a result, they limited their market to a narrow segment of the helicopter industry, namely the wealthy. Dallas also experienced a lack of public opposition. Although convenience of security for VIPs and proposed multi-modalism with the connection to the light rail system were mentioned, neither of these issues were stressed as a defining reason for the heliport. Washington, D.C.'s proposers did present advantages of a heliport as part of their approach. The main ones were corporate executive transportation for Capitol Hill, advancing the economy with sightseeing operations, and potential jobs for local residents. However, these were not presented as important problems that could be solved with a heliport, but positive advantages of the facility. In addition, Washington, D.C.'s current political and fiscal priorities do not encompass serious consideration of a public-use heliport at this time.

Reasons to construct the Pittsburgh heliport were not defined as *important*. The main rationale to build the facility was that it would be a place to base the police helicopter, which Pittsburgh

TABLE 5 APPLICATION OF PUBLIC INVOLVEMENT MATRIX

PUBLIC INVOLVEMENT ELEMENTS	DEGREE OF APPLICATION					
	DALLAS	PORTLAND	MIAMI	PITTSBURGH	WASHINGTON, D.C.	SAN FRANCISCO
ADDRESSING AN IMPORTANT PROBLEM	+	+	+	+	-	-
RESPONSIBLE AGENCY ADDRESSING PROBLEM	+	+	+	+	-	-
USING REASONABLE PROCESS AND APPROACH	+	+	+	+	+	+
PUBLIC UNDERSTANDING AND CARING	+	+	o	o	+	+
SUCCESS RATING	SUCCESS	SUCCESS	SUCCESS	LIKELY	UNLIKELY	UNSUCCESSFUL

KEY	
APPLIED	+
UNNECESSARY	o
NOT APPLIED	-

Source: Dr. Robert Winick and SAIC, 1994.

did not yet have. A better "important problem" could have been that it would provide multi-modal transportation.

In Portland, the proposers were the local helicopter organization whose problem was that they were going to lose their existing heliport. Although it can be supposed that most citizens of Portland did not see this as a critical issue, *it was accepted as the proposers' important problem.* This acceptance is due to the extensive *public involvement work* and subsequent negotiations with the opposition that the NWRA performed. The results were: the heliport was constructed, it does not interfere with surrounding land uses, and it does not cause other problems for the citizens. The proposers increased the heliport's value and acceptance to the community by co-locating it with the parking garage. The facility can also be considered multi-modal due to the access to the Portland light rail transit system at ground level.

The purpose of the heliport study in San Francisco was to settle once-and-for-all, the on-going issue of whether or not the city needed a heliport, rather than as a means to promote construction of such a facility. Both the heliport proponents and the anti-heliport neighborhood groups saw that purpose as the "important problem." Considering that purpose, the public review process in this case can be seen as a success because the results were accepted by *both* sides of the issue. The key to this acceptance is twofold. First, everyone who wanted to be involved in this issue was involved. And second, at the end, everyone involved understood why the commission made the decision against the heliport. However, even though the Port was successful in bringing the issue to a decision, San Francisco does not meet the SDIC definition of "addressing an important problem" in terms of *promoting* heliport construction. In other words, they *did not define the construction of the heliport as the solution to an important problem.*

In all cases except Washington, D.C., the agency responsible for the decision to construct a heliport either directed the effort, or was the one to which the private proposers directed their effort. The situation in Washington, D.C. reflects the fact that there are no aviation facilities in the District. Consequently, there is no one local government agency yet identified as responsible for heliport development.

As noted in the case studies (section 4.0), public meetings were held regarding the Dallas Vertiport development, but the only person who attended wanted the heliport. Pittsburgh, so far, has had minimal need to deal with public concerns, but the potential to do so may be there once final plans are made. Dallas and Miami proposers experienced no public opposition. This only means that public negotiation was not required in these locations, not that the local government does not care. In Portland, where the public opposition was quite strong, the private sponsor successfully handled the public concerns by working with the opposition.

In San Francisco, the decision on whether to build a heliport had been a public controversy for many years. The study was part of a reasonable process and approach to make a decision one

way or another. The Port of San Francisco sponsored the feasibility study and would have been the responsible agency to construct and operate the heliport if the decision to build it were made. However, from an SDIC perspective of successful heliport implementation, they were not the appropriate "responsible agency" because they were not specifically promoting the heliport. Public understanding and caring was displayed by the Port's extensive public interaction with and by the diverse interests on both sides of the question.

The irony here is that the result serves to illustrate that applying the SDIC process does work, but in this case, it worked for the public activists who would oppose any heliport. The public opposition to helicopters and heliports (as well as to other issues of public concern, such as the relocation of Candlestick Park) has created an extremely effective organization. In this case, these groups were able to develop a broader sense of purpose and a better understanding of what is important within the neighborhoods and city government than the pro-heliport forces, who were primarily based outside the city.

6.1.3 General Observations

One conclusion that may be reached from the case studies is that, in most locations, heliport development takes persistence. It took 11 years for the Dallas Vertiport to receive final approval and work through location issues. It faced several obstacles that could have eliminated the project but the proposers were determined to keep finding answers. The Portland heliport took 8 years to be completed. As private proposers they displayed dedication and resourcefulness in addressing public concerns. They worked closely with the agency responsible for the decision to build, and used reasonable processes and approaches to establish their credibility. Pittsburgh is still undergoing a continuing multi-year effort. Different proposers have been trying to develop a heliport in Washington, D.C. for over 3 decades and in San Francisco for at least 2 decades. Miami unquestionably had the least problems with heliport development. The responsible agency proposed and constructed the facility and there were no problems with public opposition. The process was somewhat simplified as it was a local government aviation department installing a heliport at an airport that they own and operate.

Of the four heliports that can be considered successful, or likely to be successful, three (Dallas, Miami, and Pittsburgh) were proposed by local government agencies. It would appear that once the responsible local government agency decides to back a heliport there is a good chance of success, although there still may be pitfalls as in Pittsburgh. In all of the case studies, the heliport proposers were well organized. Some proposers, as in the case of Washington, D.C. were very experienced. Others learned more as they went along as seen in Portland.

Although the Portland example shows that *preliminary* local government backing is not absolutely necessary, initial local government neutrality or consent is an advantage. The two unsuccessful examples, Washington, D.C. and San Francisco, are locations where the citizens or local government do not place a great importance on providing heliport facilities. These two

cases perhaps skewed the evaluation of the SDIC principles since there was little to no chance of success. However, the proof of the negative hypothesis is that the lack of one of the public involvement elements tends to result in the heliport not being implemented. Perhaps a better test of whether SDIC methods make a difference would be found in locations where the local government is more neutral and does not have a 20 to 30 year history of blocking such facilities.

Although it was concluded that successful heliport proposers must have persistence, this should not be taken to the extreme. From the data presented it must also be concluded that there are some locations where heliports may never be built. However, an important quality for a proposer is also a willingness to reassess what is truly important about the proposal and to stick to it, while being flexible enough to modify the less important parts. This correlates with one of the lessons from the FAA Workshop, *do your homework before you propose a heliport*. There is a difference between locations that embrace the idea yet take a long time to implement, and those that never accept the idea in the first place. Who knows, Washington, D.C. or San Francisco may yet support a heliport.

6.2 RECOMMENDATIONS

6.2.1 SDIC and Workshop Approaches

Both the SDIC approach (section 3.0) and the FAA Workshop (section 4.0) techniques and strategies provided sound recommendations. Recapping, *SDIC* provides a *top down* approach resulting from research and evaluation of the public decision-making process. The Workshop results provide an approach based on the experience of persons practiced at heliport implementation. The Workshop strategies are more of a common sense approach for managing of interaction with the public and government officials (see table 2). Furthermore, they are vehicles through which the principles of SDIC can be applied.

Although much of the same flavor of honesty and directness can be seen from both approaches, SDIC is considered here as an evolutionary step in implementation methodology. This is because SDIC more clearly defines two key principles that go beyond traditional approaches, these are:

- *Informed Consent* is the concept that proposers do not have to have all out approval from all community elements, only agreement not to oppose the facility, and

- *Addressing an Important Problem* is the demonstration that the heliport will solve an important problem, not just the presentation of the heliport's potential benefits.

These two factors are obviously very much linked because the best way to persuade people not to oppose the facility is to satisfy them that there is a problem that the heliport will solve. *Important problems* do not have to be big problems, in fact it may be better to narrowly define

them. If proposers say, "all the transportation problems of the city will all be solved by the heliport," they will lose their credibility in all matters. The Portland *important problem* was certainly parochial but the key here is that it was believable. Replacing an existing heliport is a problem that other people can understand and accept coming from a helicopter association.

Another critical point concerning *important problems* is that you cannot decide you want a heliport and then come up with an "applicable" important problem. As in the market, it is more profitable finding what the consumer needs and then developing a product rather than developing a product and then trying to convince the consumers they need it.

The other three basic elements:

- Responsible Agency Addressing Problem,
- Using Reasonable Process and Approach, and
- Public Understanding and Caring,

are also very important. Once these are understood, efforts to address them can be enhanced using techniques and ideas from the FAA Workshop. Of particular importance are:

- Be Honest—Address Real Issues;
- Think and Act Long Term, It Is a Long Slow Process; and
- Be Ready to Understand and Address the Concerns of Those in Disagreement.

In locations where strong opposition to heliport development has been identified, or is anticipated, identify ALL players in the decision-making process and understand their agenda and concerns about heliports. If you only identify expected *key* players, someone whom you did not identify is bound to show up and become an unexpected *key* player. Fashion the proposed heliport to fit within each agenda, provide options, and be prepared to address their concerns if that can be done without giving up the basic objective of the proposal. Treat the process the same as seeking political support for school funding, prisons, zoning variances, etc. Once political willingness not to oppose is indicated, then complete the technical analysis and obtain necessary permits.

One important strategy is to ensure strong support from the helicopter community, and keep the option open for strong private investment in the heliport. That was a key element in Portland and it can be the deciding factor for many communities that would otherwise decide not to support the heliport.

6.2.2 Heliport/Vertiport Studies

This study was initiated to discover why the numerous vertiport/heliport planning studies resulted in very few vertiports/heliports and to suggest methods to improve success rates.

Planning studies were completed in four of the six case study areas: Dallas, Pittsburgh, Washington, D.C., and San Francisco. Of these, only one, Dallas has a completed heliport, and that was not developed as a direct result of that study, although information was taken from the study in some aspects of development. Pittsburgh's may have a heliport but it is not built yet. Washington, D.C., and San Francisco do not have heliports, and may not have in the foreseeable future. Miami built a heliport at an airport without a study and turned back money for a later study due to lack of interest. A study may have identified some of the problems they now experience before the heliport was built when they could have been corrected. However, Portland never had an "official" heliport study.

From this limited assessment it can be concluded that studies, per se, may not be required to ensure successful heliport/vertiport development, although sound technical work would appear to be the prudent way to go about implementation. In fact, applying the SDIC approach as a baseline, most aviation planning studies have not been structured to effectively assure or implement approval processes even though public participation is a significant element of most planning studies.

Heliport/vertiport studies can be effective in determining need, establishing local government intent, incorporating plans, and developing both aviation systems and transportation systems in areas where development is likely. The FAA has recently emphasized the need to *tailor* planning studies to each particular situation and move away from the more traditional *cookie cutter* approach. As demonstrated in both the SDIC approach and Workshop findings, a more sophisticated, long range public involvement program *in addition to* the technical analysis of a customized heliport/vertiport study, may be much more effective.

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LIST OF ACRONYMS

14 CFR	Title 14 Code of Federal Regulations
ADO	Airports District Office (FAA)
AICP	American Institute of Certified Planners
AIP	Airport Improvement Program
ANC	Advisory Neighborhood Council
ATC	Air Traffic Control
CAC	Citizen's Advisory Committee (San Francisco)
CALTRANS	California Department of Transportation
CBD	Central Business District
COG	Council of Governments
CPO	Citizen Participation by Objectives
CTR	Civil Tiltrotor
DCA	Identifier for National Airport in Washington, D.C.
DEA	Drug Enforcement Administration
DART	Dallas Area Rapid Transit
DOT	Department of Transportation
EH	European Helicopters
EMS	Emergency Medical Service
ENG	Electronic News Gathering
ERHC	Eastern Region Helicopter Council
FAA	Federal Aviation Administration
FBO	Fixed Base Operator
FHA	Federal Highway Administration
FTA	Federal Transit Administration
GA	General Aviation
GIS	Geographic Information Systems
HAI	Helicopter Association International
Hdqrs.	Headquarters
IFR	Instrument Flight Rules
ISTEA	Intermodal Surface Transportation Efficiency Act
MAHA	Mid-Atlantic Helicopter Association
MPO	Metropolitan Planning Organization
NASA	National Aeronautics and Space Administration
NCTCOG	North Central Texas Council of Governments
NEPA	National Environmental Policy Act
NWRA	Northwest Rotorcraft Association
PANYNJ	Port Authority of New York and New Jersey
PGE	Potomac Gas and Electric
PHPA	Professional Helicopter Pilots Association (California)
SAIC	Science Applications International Corporation

SCAG	Southern California Association of Governments
SDIC	Systematic Development of Informed Consent
SE	Southeast (a division of Washington, D.C.)
SPRPC	Southwestern Pennsylvania Regional Planning Commission
TCA	Terminal Control Area
TLOF	Touchdown and Lift-Off Surface
VFR	Visual Flight Rules